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Why and Which Tranquilizer?*

• In the search for tranquility, many new drugs have been used, some of which have proved superior for particular emotional disturbances. When it is impossible to change the environment, these drugs must be used for long periods of time, if best results are to be obtained. Side effects and sensitivity must be recognized.

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IN this atomic age many miracle medicines have been shot into orbit, while many more failed before they reached a zenith or fizzled on the launching pad.

Tranquilizers have had their hour or moment of "newness" and have lost some of the appeal which they once possessed as "wonder drugs", since their effects have been investigated by chemists, psychiatrists, psychologists, and lately by Congress.

Tranquility

Tranquility is a state of calm, serene composure, free from disturbance and accompanied by wakefulness; it is a state to be desired in self but not so appealing in one's employees. Culturally, we hope tranquility rather than confusion will be our lot when we become aged; this same tranquility is not regularly admired in the young, rather they are taught to be anxious, competitive, and concerned. The only people who stress tranquility in children, as a virtue, are the "next door" neighbors.

This is a more anxious than a tranquil age. The tranquility of the first fifty years of life may be continuously interrupted by concern over the last fifteen. Among all living things only man is aware that he will die. This concern for the future provides a sustained market for, at least, a transitory tranquility.

Since that awesome moment when man realized the satisfactions of the day were so temporary he would have to repeat the entire procedure the following morning, he has been attempting to regain the tranquility this foresight destroyed.

Tranquilizers have been prominent in this era and we, as doctors, as well as the consuming public, have been assaulted with a barrage of claims and names, all alleging the myriad virtues each is supposed to possess. If the fantastic articles in the lay press and the artistic enterprise

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of advertising departments can be believed, the masses of humanity on this globe on which we live can forever banish anxiety, by the simple act of purchasing and consuming an assortment of pills and capsules of various sizes, shapes, and hues.

The gullability of the public and the effectiveness of this selling campaign are attested to by the fact that 50 million prescriptions were filled this past year for people whose main purpose in life seems to be to forever gaze on this naughty world in which we live, through rose colored glasses. If we are to judge by the amounts of these drugs used, the lack of tranquility in these United States is reaching truly epidemic proportions.

I was highly amused when I read an article by my good friend, Dr. Jackson Smith, when he observed: "Of course, man had tranquilizers several centuries before he realized that phenothiazines had derivatives; he found that alcohol made him unconcerned, calm and serene, to the point of stupor."

It has been stated that "primitive man experimented with every root, twig, leaf, flower, and fungus in his environment" and that pharmacology preceded agriculture. It seems that by the late stone age primitive man was poisoning himself in a somewhat systematic fashion and that there were addicts even before there were farmers.

Proper Use of Tranquilizers

However, there is a very definite place in modern medicine for the proper use of tranquilizers, in selected cases. The increased discharge rate and the shortened stay of those admitted to our mental hospitals offers uncontested evidence of the effectiveness of these drugs in our armamentarium.

Actually the term "tranquilizer" is a misnomer for the drugs under discussion. These compounds are not merely sedatives, nor are they "happy pills" or "Don't-give-a-dam pills". They have physiologic and pharmacologic actions in addition to their ability to tranquilize. It is scientifically wrong to confuse them with barbiturates and other sedatives and hypnotics which may tranquilize but also produce drowsiness. It is regrettable that common usage forces the misnomer "tranquilizers" in this discussion.

From many sources have come reports of the use of these drugs in a wide variety of illnesses. An assessment of these reports is difficult because some appear to be over enthusiastic, uncritical, and even unscientific, while others consist of hypercritical reviews based on insufficient evidence. A comparison of the opinions held and the results obtained by different writers is confounded by the fact that diagnostic criteria vary, different treatment methods are used, and standards of recovery are differently assessed.

Prior to tranquilizers, drug treatment of emotional and mental aberrations was restricted to the short term use of barbiturates, bromides, and chloral hydrate. The disadvantages and limitations of these compounds were known to every doctor and they naturally began to prescribe the new tranquilizer because they represented an advance over the older drugs. Millions of people for whom there was no satisfactory medical agent for their phychic disturbances now could be treated with tranquilizers.

Therapeutic Application

The large amounts of tranquilizers consumed is at least partially explained by the wide therapeutic application and the fact that these drugs can be used for long term therapy, at times in high doses.

The commercial success of tranquilizers stimulated drug manufacturers to produce improved compounds. As a result, many tranquilizers are now marketed. They differ in chemical structure, potency, propensity to produce side effects, and their indications and contraindications. In the past five years as much clinical investigation and research has been done with tranquilizers as has been done in the last fifty years with barbiturates.

They may be divided into those effective in psychoses and neuroses and those useful in neurotic conditions only. The

former are the phenothiazine derivatives, thorazine (chlorpromazine), Sparine (promazine), Vesprin (trifluprομazine), Pacatal (mepazine), Compazine (proclorperazine), and Trilafon (perphenazine); and the rauwolfia derivatives such as Reserpine and Harmonyl (deserpidine). Those useful in neurotic conditions are Atarax (hydroxyzine), Miltown (meprobamate), benactyzine, eceyturea and Ultran (phenaglycodol). The meprobamates also act as muscle relaxants.

Some patients unresponsive to one tranquilizer may respond favorably to another. This difference in the capacity of these drugs to produce certain physiologic and pharmacologic actions makes the choice of one drug preferable to another in treating a particular patient.

TABLE 1
ANXIOUS OFFICE PATIENTS

The Anxiety May Be Expressed as:
- Behavior Problems in Children
- Sleeplessness
- Restlessness
- Aggressive Outbursts
- Feelings of Inadequacy
- Paranoid Attitude
- Depression
- Irritability
- Psychosomatic Disturbances
- Attacks of Weeping
- Feelings of Inferiority

The pharmacologic action of Reserpine affords therapeutic benefits, not merely palliative effect.

ADVANTAGES

No clouding of the psyche, permitting patient to carry on his usual activities.
No serious adverse effects on pulse or blood pressure.

DOSAGE

Schedule must be individualized; Start with:
Mild: 0.25 mg. to 0.50 mg. Serpasil orally daily
Moderate: 0.50 mg. to 1.0 mg. Serpasil orally daily

It is possible to manage many acutely disturbed psychiatric patients by the prompt administration of adequate doses of Serpasil (reserpine). (Table 2) This can be accomplished by giving 5 to 10 mg. intramuscularly. If after an hour and a half the patient is still disturbed, a second injection of 5 mg. can be administered. This has a tranquilizing effect which facilitates the management in the home or, if necessary, in the hospital.

Mildly anxious patients can be treated with oral Serpasil 0.25 to 0.5 mg daily, given in a single dose, preferably at bedtime. The moderately anxious patient should receive 0.5 to 1.0 mg.

TABLE 2
EMERGENCY CASES
ENCOUNTERED IN THE PHYSICIAN'S PRACTICE

- Panic
- Acute Confusion
- Acute Anxiety
- Psychomotor Excitement
- Delirium Tremens

Consequences:
- Rapport Maintained
- Patient Tranquilized
- Prepared for Treatment
- Family Reassured

DOSAGE

5 mg. Serpasil intramuscularly.
Wait 90 minutes before second dose of 5 mg.

ADVANTAGES

Makes possible treatment in general hospital or nursing home.
Shortens period of hospitalization.
Replaces or reduces shock therapy.
The 5 mg. ampul in the doctor's bag is the difference between medical and police control.

Serpasil is a slow acting drug. Therefore the dose should not be increased too rapidly. Therapeutic persistence is imperative. Many failures can be attributed to either inadequate dosage or the premature termination of treatment.

No one knows with any degree of certainty whether the tranquilizers cure a neurosis or psychosis or merely suppress some of their disabling symptoms but they have helped many patients to remain at home, to work, and to be reasonably comfortable in spite of the persistence of the basic disorder. These are not small accomplishments. To withhold these drugs solely because they are not curative is as unreasonable as it would be to discard insulin, digitalis, or anticonvulsants.

Dosage and Prolonged Administration

There has been much critical discussion about dosage and prolonged administration of tranquilizers. There are patients who require much more of a drug than others just as some require more ether

than others for an anesthetic. A common error is to give too little rather than too much or to terminate treatment prematurely. There is an art of tranquilizer therapy, as in anesthesia, in which some physicians are more skilled than others. This accounts for the divergent results and complications reported by different therapists.

It is unrealistic optimism to expect to reverse chronic ailments by a short course of tranquilizer therapy, especially where the environment or situation is not changed. Adequate doses must be given for prolonged periods. Some physicians' attitude regarding lengthy drug therapy is paradoxical. They have no hesitancy in administering barbiturates, even in large doses, for a lifetime to an epileptic but are loathe to give their nervous patients tranquilizers for more than a few weeks. Others refrain from prescribing large doses of a tranquilizer for fear of untoward reactions. The latter is untenable.

Risk of Habituation

The risk of addiction or habituation from prolonged use of tranquilizers is practically nonexistent. It is a common experience of doctors that neurotics frequently take less rather than more of the prescribed dose of any drug. This has been especially true for tranquilizers. Patients do not develop a tolerance for a tranquilizer with long-term use, and therefore, increasing doses of the drug are not necessary. Instead as they improve with continued use of a tranquilizer the dose is decreased rather than increased. This is in contrast to the predecessors of tranquilizers and another reason why prolonged use of these drugs is not dangerous. As occasional abuse of a tranquilizer is more readily explained by the psychopathology of the abuser than by any addictive properties of the drug.

At not one of the National or International meetings at which these drugs were discussed by experts from the world over has a single documented case of addiction to a tranquilizer been reported. Those people who take tranquilizers just for kicks are the very ones who could become habituated to barbiturates or addicted to narcotics.

Some objectors to tranquilizer therapy, especially prolonged use of these drugs, are more concerned with the possible deleterious effects of suppressing anxiety than with any possible physical harm that may occur from their use. The fear that the widespread use of tranquilizers would produce a nonproductive society has not materialized. It is a truism that a certain amount of tension is a salutary force needed for fruitful living. The most sanguine physician would not prescribe a tranquilizer for what might be termed normal anxiety. Some of those who condemn tranquilizer therapy do so for philosophic rather than for scientific reasons.

Adverse Reactions

Much publicity has been given to adverse reactions to tranquilizers. This has distorted the facts. Properly administered, these drugs are safe. Distinction must be made between side effects and allergic reactions to a drug. The former are normal. They are due to the physiologic and pharmacologic action of the medicine. Depending on the dose taken they occur in varying degrees of intensity. They may be troublesome but are seldom serious. They usually remit spontaneously with continued treatment or they may be modified by a temporary reduction of the dose or the addition of other drugs to the patient's medication. Side effects are dependent on dosage. (Table 3)

Calling attention to the side effects of a drug is necessary but they can be overemphasized making the drug appear very dangerous. The litany of all the side effects an individual tranquilizer causes can be very misleading unless it is pointed out that the list is a complilation of all side reactions noted in a large group of patients. Some people rarely have a side effect from a drug; others may have several, but no single patient has all the side reactions a drug is capable of producing. Long lists of side effects are also deceptive unless the frequency of occurrence of each side reaction is stated since some are rela-

TABLE 3
SIDE EFFECTS AND THEIR MANAGEMENT

Give Minimal Effective Dose	
Lethargy	Ritalin
Nasal Stuffiness	Antihistamines
Jitters	Reduce Dosage
Nausea	Antrenyl

CONCLUSIONS

1. It is possible to offer patients treatments on an ambulatory basis without losing time from work.
2. If hospitalization is indicated, patient may be treated adequately in a general hospital or nursing home.
3. Replaces or reduces electroconvulsive therapy.
4. These factors make Reserpine therapy economical, a consideration of prime importance to the private patient.

tively common while others may occur once in a million patients.

Any discussion of side effects is beset with many pitfalls unless one keeps in mind that a drug, to be effective, must have side effects. Most side effects occur in the early stages of tranquilizer therapy. No physical harm has been reported from prolonged moderate use of phenothiazine or rauwolfia derivatives. Recently completed laboratory tests consisting of urinalysis, blood chemistries, liver function studies, and hematologic studies on 50 patients taking Thorazine (chlorpromazine) from two to four years, 50 patients receiving Reserpine from two to four years, and 50 patients receiving Trilafon (perphenazine) from one to two years, did not disclose any major pathological findings. Likewise, as far as I have been able to find no permanent neurologic effects from the use of tranquilizers have been reported.

The sedative effect of tranquilizers is quite variable and related to the chemical structure and potency of the compound. Depending on the individual susceptibility of the person, the nature of a specific drug, and the dose, this sedative action may assume varying degrees of severity. Tranquilizers do not continue to produce drowsiness, somnolence or sleep in those who take therapeutic doses for more than two weeks, even if the dosage is increased. Consequently, several thousand patients have taken large daily doses of tranquilizers and have been able to drive, operate machinery, or to work in industry under all kinds of conditions.

Allergic or sensitivity reactions occur as often in patients receiving small doses as they do in those receiving large doses of the drug.

Idiosyncrasies do not depend on dosage. Side effects do. Since idiosyncrasies occur early in treatment the patient receiving any potent drug should be carefully observed and blood studies repeated during the first four to six weeks to guard against untoward reactions. There is usually little to fear after this period.

Allergic responses to tranquilizers are not normally expected as are side effects. They occur in less than 1 per cent of the patients receiving the drug. In most cases they are attributable to individual hypersensitivity to the drug although the mechanisms that underlie this are not fully understood.

Phenothiazine derivatives (Table 4) in contrast to rauwolfia derivatives have been responsible for the great majority of the dermatologic and systemic manifestations of drug hypersenstitivity. Patients with skin reactions to phenothiazine derivatives usually are not ill. It is seldom necessary to discontinue the drug because

TABLE 4
PHENOTHIAZINE DERIVATIVES

More Potent (Smaller dosage required)	
Trilafon	Perphenazine
Dartal	Thiopropazate
Compazine	Prochlorperazine
MEDIUM POTENCY	
Vesprin	Trifluprom azine
Thorazine	Chlorpromazine
Sparine	Promazine
Least Potent (Larger dose required)	
Pacatal	Mepazine

DEGREE OF SEDATION

The degree of sedation can only be evaluated subjectively by the patient. Patients report the highest degree of sedation with Thorazine and Vesprin followed by Dartal, Compazine, Pacatal, Sparine and Trilafon in that order. Thus the degree of sedative effects of the phenothiazine compounds do not appear to be related to their potency.

of skin reaction. However, if the drug is withdrawn it may be resumed safely after the dermatitis clears.

Further evidence that thorazine (chlorpromazine) for example, is not toxic to the liver has been provided by a recently completed survey of 50 patients who have taken this drug from two to four years in total doses from 50,000 to over 1,000,000 mg. Liver function studies in these patients did not disclose any significant change from their pretreatment liver function tests.

The most serious blood dyscrasia resulting from phenothiazine therapy is agranulocytosis. This expression of drug idiosyncrasy has been rare. Less than 100 cases have been reported in the millions of people who have taken phenothiazine drugs all over the world. Even this low incidence is a reflection of the large number of patients who are being given these drugs rather than a sign of serious toxicity.

Serum sickness and anaphylactic shock are rare expressions of drug sensitivity which have appeared in patients receiving meprobamate. These same reactions have been caused by the Asiatic flu vaccine, penicillin, and other antibiotics. In fact, such idiosyncratic reactions have resulted from eating certain foods which most people consume with immunity.

It is widely held that depressions occur frequently in patients treated with tranquilizing drugs, especially the rauwolfia derivatives. This has been challenged by the findings of a recent follow-up study of 70 patients originally diagnosed drug-induced depression. This study emphasized that a careful distinction must be made between excessive tranquilization and true depression. The former resembles depression. It is due to too large a dose of the tranquilizer and remits when the dosage is reduced or a stimulant is added to the medication. This survey disclosed that the majority of those patients who were truly depressed were that way before the drug was started and what the drug did was make the depression more apparent. On the basis of this and other clinical facts established by this follow-up study it has been concluded that tranquilizers do not, per se, cause depression. Rather, they can cause excessive tranquilization or unmask an underlying, pre-existing depression.

Time and the number of patients receiving the drug are the most important factors in revealing side effects to a new compound. For this reason less is known about the side effects of the more recent tranquilizers. What we know indicates that these drugs are safe and seldom produce a serious toxic reaction.

Conclusions

In the five years since tranquilizers have been available a considerable body of knowledge about them has been accumulated. That these drugs constitute a valuable advance in the management of mental and emotional disorders is evident. They have been productive of comfort to many sufferers who previously had no ready source of relief. Their impact on the hospitalized psychotic, on the admission and discharge rate in psychiatric hospitals everywhere is well known. Since tranquilizers have been used in private practice the number of patients committed to state and private mental hospitals has been reduced drastically while the number admitted to general hospitals without a special psychiatric unit has increased markedly. The average duration of hospitalization has been cut in half. The number of patients requiring electroshock therapy has been reduced 75 per cent. These drugs have made it possible for many patients to work or attend school who formerly would not have been able to do so. That tranquilizers have radically changed the course and prognosis of many psychiatric disorders is now an established medical fact.

There has been considerable criticism of tranquilizers and their producers—some justified, some unwarranted. Honest mistakes have been made with them. I should like to emphasize: (1) The tran-

quilizers are very important new medical tools. (2) Contrary to reports in some lay publications they are not happy pills capable of placing anyone in a state of Nirvana with permanent peace of mind. (3) They must be used with the care and discretion that only a good physician can provide. (4) While a few so-called tranquilizers have been advertised unwisely the majority of manufacturers have exercised admirable caution and restraint in their promotion. (5) The phenothiazines are beneficial in psychoses and neurosis and may be used in neurotic conditions. But the meprobamates are not suited to the treatment of psychosis and neurosis.

Health of the City

Since the date of our last number the City has continued in the enjoyment of uninterrupted health. The diseases of the warm season disappeared with it, and though now in mid-winter, there is no disease prevailing worthy of notice. * * * If New Orleans is to continue as healthy as it has been throughout the past year, at least one half of the physicians ought to seek places where they can do better. * * * In the hospitals there have been a few cases of Typhoid Fever in persons recently arrived by sea, and from the country; but so far as we know none have originated in the City.

A plan has been submitted to the Council of the 2nd Municipality by Mr. Samuel J. Peters, for supplying this Municipality with water for the purpose of washing the streets, extinguishing fires, etc. which we think of great importance. The necessity of having a sufficiency of water at command, promptly to extinguish fire, is at once apparent to every owner of property and needs no appeal from us; but the cleansing of the streets by which the city will be rendered more comfortable and salubrious, although certainly not of minor importance, is a public duty, and therefore liable to be neglected. * * * The filth and offensiveness of our streets have become a by-word and a reproach. * * * We could not expect the purlieus of a crowded city to be healthy as the open air of the country; but if our streets were kept perfectly clean, New Orleans might possibly become almost as healthy as the residences along the coast, which are probably not excelled in this respect by any in the world.

New Orleans M. J. 1:372 (January 1) 1845.

The Nature of Achalasia*

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ACHALASIA has been a fascinating topic for physicians for nearly 300 years. Dilatation of the esophagus without obstruction was described by Hannay [1] in 1833. This was not the first case described, as there is a case of a man having the clinical features of achalasia who was reported on by Thomas Willis in 1672. Willis reported that because his patient was losing weight due to esophageal obstruction, he prepared an instrument like a rod and made of whalebone, with a little round button of sponge fixed to the top. During the succeeding 15 years, the patient practiced blind bouginage of the stomach with clinical improvement. Willis concluded in this case: "the mouth of the stomach being always closed, either by a tumor or a palsy, nothing could be admitted into the ventricle unless it were violently opened." [2] Mikulicz, in 1882, suggested that the disorder was the result of spasm of the cardia. The disorder has been most commonly referred to as cardiospasm.

There is little evidence to support the concept that the symptoms are due to spasm of the cardia. The obstruction appears to be the result of failure of the cardia to relax. Hurst adduced this from the lack of resistance to the passage of mercury bougies through the cardia. The more appropriate term, achalasia, or failure to relax, was suggested by Sir Cooper Perry and used by Hurst in relation to this disorder in 1915. Since that time, a variety of names have been applied to functional obstruction of the lower end of the esophagus and various explanations have been offered for this kind of dysphagia. Cardiospasm and achalasia are the names most frequently used, but others employed include mega-esophagus, esophageal dystonia, and aperistalsis of the esophagus.

The early clinicians felt that this condition was the result of spasm of the cardio-esophageal junction, hence the name—cardiospasm. Although this is still the most commonly used name, there has been a recent trend toward terming the condition achalasia, which suggests that the disorder is the result of failure of relaxation of the cardia from its normal state of contraction.

Etiology

The etiology of achalasia remains an enigma. Numerous causes have been suggested, most of them without sound basis. Some of these suggestions, now largely discarded, include the pinchcock action of the diaphragm,[3] external pressure on the esophagogastric junction by the liver tunnel,[4] primary dilatation of the esophageal walls,[5] and overactive sympathetic stimulation of the cardiac sphincter.[6]

The consensus of opinion now tends toward the concept that cardiospasm, or achalasia, is not a localized process due only to spasm of the cardia, but a disorder which involves most, if not all, of the esophagus. Hurst's concept that the condition was one of failure of relaxation of the cardia suggested that there might

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be associated neurological changes. In 1927, Rake [7] demonstrated degeneration of the ganglion cells in the plexus of Auerbach in two patients with achalasia. These observations have been confirmed by other investigators. The study of patients at different stages of the disease suggests that the earlier changes may be those of a subacute inflammation which is subsequently followed by destruction of the ganglion cells and replacement of the cells by areas of fibrosis. The changes in the myenteric plexus in achalasia are similar to those observed in aganglionic megacolon, and the similarity between the two disorders has been noted.

Although the morphologic findings in achalasia are well established, the cause of the degeneration of the ganglion cells in the myenteric plexus is unknown. In the earlier cases, inflammatory changes surround the ganglion cells, whereas in the latter cases, fibrosis is evident. It is possible that the degenerative changes might be due, in part, to stretching of the esophagus. Woller [8] takes the position that the degenerative changes in the myenteric plexus are the result of dilatation of the esophagus, rather than the primary cause of the disorder. Etzel [9] suggests that the degenerative changes might be secondary to a Vitamin B_1 deficiency because of the similarity to changes in the ganglion cells noted in beriberi. This concept has not found widespread support as there seems to be no correlation between the incidence of achalasia and that of Vitamin B_1 deficiency. Brazilian students of this condition have been impressed by the occurrence of achalasia in areas having a high incidence of Chagas' disease and have suggested there might be an etiological relationship; but the fact that achalasia is equally common in countries where Chagas' disease is rare, or unknown, tends to discredit this concept. Further study is necessary to determine the status of Auerbach's plexus in normal individuals, and in patients with functional dysphagia and achalasia.

Achalasia has also been considered to be a psychosomatic disorder. The swallowing time of normal persons and patients with esophageal symptoms may be lengthened by subjecting them to psychic stress. Studies of the psychosomatic aspects of achalasia demonstrated that neurotic traits were frequently observed during childhood of these patients, and in many cases persisted into adult life. Patients with achalasia have been characterized as being perfectionistic, neat, orderly, and meticulous; they have also been noted to be submissive, sensitive, and rather easily offended. McMahon [10] reported that cardiospasm is a disease of the frustrated and is not seen in happy, contented or well-adjusted individuals. However, even though certain psychic abnormalities may be observed fairly frequently in patients with achalasia, this does not establish the fact that the disease is psychogenic in etiology. In fact, most investigators believe the psychic factors are of secondary importance in this condition.

The gross pathological changes vary considerably depending on the duration of the disease. There is probably a considerable latent period before symptoms develop, and the pathologic changes appear to be of a long-standing duration even in those patients whose clinical history is relatively short. The caliber of the esophagus may vary from almost normal to the dilated, tortuous esophagus seen in the late stage of the disease. Initially, the esophagus is of normal caliber but because of the difficulty in swallowing, the esophagus hypertrophies and dilates. Secondary changes involving the esophagus are frequent as a result of the long-standing dilatation. These consist of chronic inflammatory changes involving primarily the mucosa. The esophagitis is the result of the irritative action of the stagnated material, which affects the relatively sensitive esophageal mucosa.

Pathophysiology

The clinical features, the course of the disease, and the treatment have beeen described in numerous publications during the intervening years. Only recently has much attention been paid to the pathophysiology of achalasia. The increased interest in achalasia, as well as of other

nonmalignant disorders of the esophagus, coincides with the development of equipment capable of accurately measuring and recording the intraluminal pressures of the gastrointestinal tract.

We have developed a new method for studying esophageal motility, based on the principle of simultaneous filming of intraluminal pressure tracings and amplified fluoroscopic images.[11] This technic permits correlation of pressure changes and radiologic phenomena, thus facilitating the study of the nature and function of the various pressure waves. The studies of esophageal motility on patients with achalasia reveal a generalized disorder of motility which involves most of the esophagus.[12-18]

The deglutition complex in patients with achalasia differs from the deglutition complex in normal subjects in several respects. The peak of the swallow complex occurs simultaneously at the three levels studied in the achalasia group indicating that the waves are not propulsive. The mean duration of the waves is prolonged at all three levels and the waves do not differ significantly from each other. Lastly, the amplitude of the complexes from the patients with achalasia is much less than that observed in normal subjects (Figure 1).

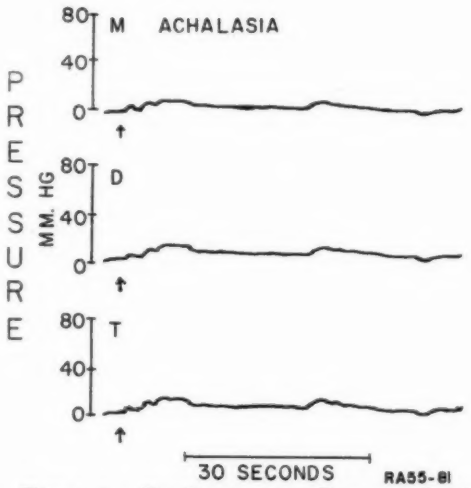

Figure 1.—Simultaneous swallow complexes from the middle (M), distal (D), and terminal (T) segments of the esophagus from a 47-year old man with a 20 year history of dysphagia. Onset of deglutition complex indicated by the arrow. The X-ray of this patient is shown in Figure 2.

Many of the features of the pathologic physiology of achalasia can be explained. The motor stimuli to the esophagus reach it by way of the vagi, which contain the preganglionic parasympathetic nerve fibers. These fibers normally make synaptic connections with the postganglionic neurones within the plexus of Auerbach. However, when degeneration of the postganglionic neurons occurs, as in achalasia, the motor pathway is interrupted accounting for the disorganized motor activity observed in this disorder. The hypersensitivity to Mecholyl and Urocholine is consistent with Cannon's law of denervation. This further supports the concept that achalasia is due to a denervation of the intrinsic nerve plexi. The studies of Lerche [19] and Ingelfinger [20] indicate that the distal portion of the esophagus, the vestibule, functions as a distinct and separate motor unit for esophageal evacuation. Code [14] has shown that in normal subjects there is relaxation of the vestibular area early during the swallowing act. This relaxation and lowering of pressure occurs even before the primary peristaltic wave reaches this area. This response is not observed in patients with achalasia.

Kramer and Hollander [21] have studied the mechanism of pain in patients with esophageal disease. They found that by balloon distention of the esophagus most patients developed pain which, in most instances, was indistinguishable from their spontaneous pain. Experimental esophageal pain and clinical cardiac pain could not be distinguished from one another. The pain of patients with achalasia is the result of distention of the esophagus.

Clinical Features

The incidence of achalasia is not well known. The disorder is not rare and sizable groups of patients have been reported from various medical centers. There may be some geographic features of the disorder; it appears to be commoner in some areas, notably Brazil, than in the United

States. Almost any age may be affected, although it is most commonly seen in the fourth to sixth decades. The age of onset in our patients ranged from 14 to 78 years. Nonorganic obstructions of the esophagus presumed to be achalasia have been reported in newborn infants.[22] Inasmuch as few of these patients have been carefully studied, it is not certain that these represent the same disorder seen in adults. Achalasia occurs in both sexes with equal frequency.

The onset of symptoms is usually insidious. Dysphagia is the most common presenting complaint; initially, it is intermittent, but as the disease progresses it tends to become more persistent. The dysphagia is usually worse on swallowing solids than liquids, although cold liquids usually increase dysphagia. Many patients soon find out that they can facilitate swallowing by drinking water or large quantities of other liquids with their meals, thereby creating sufficient hydrostatic pressure to initiate emptying of the esophagus. The dysphagia is usually worse if the patient is nervous or under stress. Symptoms are more likely to occur if the patient has to eat in public.

Another frequent complaint is substernal pain. Pain is more common in persons with relatively undistended esophagi who are observed on fluoroscopy to have spasmodic contractions of the esophagus. In other patients, the pain has no relation to the ingestion of food and is indistinguishable from anginal pain. Weight loss is common and may be sizable in patients who have long-standing, relatively complete obstruction. Regurgitation of retained esophageal contents is also frequent. Regurgitation is more likely to occur when the patient assumes the horizontal position and may result in chronic pulmonary disease due to aspiration pneumonia.

Diagnosis

The diagnosis of achalasia is usually relatively easily established. The diagnosis, which can frequently be suspected when the patient presents with intermittent dysphagia and substernal pain, is established by the roentgenologist. The obstruction at the cardio-esophageal junction may be complete or incomplete. Early in the disorder, there may be intermittent passage of small amounts of the opaque meal into the stomach, although on occasion the esophagus may retain the meal for hours, or even for days. In the early stage, the lower esophagus is spindle-shaped and the meal passes through a narrow, ribbon-like stream into the stomach. Later, there is obstruction to the outlet of the esophagus along with marked dilatation and little or no barium may enter the stomach unless the accumulated food and fluids have been evacuated, the ingested barium suspension swirls through the column of fluid, pooling at the lowermost end of the esophagus. Here, the lumen tapers smoothly and concentrically to a filiform opening at the diaphragmatic level (Figure 2).

The greatest distention of the esophagus occurs in its lower half. The capacity of the esophagus varies and in advanced

Figure 2.—X-ray from a 47-year old man with a long history of achalasia. The esophagus which is dilated and tortuous above tapers to a filiform opening into the stomach.

cases more than 500 cc. of barium may be required to fill it. The esophagus is best seen in the oblique or lateral position. Characteristic of achalasia is the terminal end of the esophagus, which is narrowed and terminates in a round, smooth, cone-shaped end. It may taper gradually or a filiform process extending into the stomach may be observed. Occasionally, the diagnosis may be established on a chest film because of the widening of the mediastinum.

Endoscopy is of value in excluding other causes of obstruction of the esophagogastric junction. Careful preparation is necessary for several days prior to the test by withholding liquids for twelve hours and limiting the diet to clear liquids. Care must be taken during the course of the examination so that the patient does not aspirate the material from the esophagus. The esophagus is often dilated, and because of its tortuosity it may be difficult to follow the lumen.

Administration of parasympathomimetic drugs may be of aid in differential diagnosis in conditions simulating achalasia. The esophagus is extremely sensitive to parasympathomimetic drugs because of its denervated status. Intramuscular administration of 6 to 10 mg. of Mecholyl produces a violent tonic contraction of the lower half of the esophagus. Similar changes are noted following administration of Urecholine and concurrent intraluminal pressure studies demonstrated a rise in the baseline pressure exceeding 100 mg. of Hg. This response is not seen in the other esophageal disorders.

Treatment

The elucidation of the mechanisms underlying the motor phenomenon of achalasia has therapeutic indications. The anticholinergic drugs are of little value and, occasionally, may make the condition worse. The parasympathomimetic drugs cause contraction of the esophagus which results in the patient's having pain and emesis, rather than in the emptying of the esophagus into the stomach. The drugs which have direct muscle-relaxing effect, such as the nitrites, have been employed but their effect is transient and they are of little real value. Limited success has also been reported with the use of local anesthetics prior to meals.

The mainstay of the medical treatment of achalasia is the properly executed dilatation of the vestibule. Satisfactory results are obtained in about 80 per cent of patients. Both hydrostatic and pneumostatic dilators have been employed. We use the Mosher dilator, which gives satisfactory results and is simple to operate. The bag on the dilator may be distended from three to fifteen pounds of pressure. This procedure, which forcibly dilates the vestibule, decreases the resistance in this area so that the patient can swallow by means of the pressure demonstrated in the pharynx aided by gravity, and it does not alter the intrinsic motor abnormalities of achalasia. Some reflux from the stomach into the esophagus may follow, but this is not so common after this procedure as it is following surgical procedures on the esophagogastric junction.

About 20 per cent of patients do not respond satisfactorily to forcible dilatation of the vestibule. Surgical treatment is required for this group. A variety of surgical procedures have been employed in the past, most with rather indifferent results. The major problem is that of esophagitis following resection of the sphincteric mechanism between the stomach and the esophagus. The patients may experience relief of dysphagia but their ultimate status may be worse than prior to surgery, if they develop esophagitis with stricture. Most authorities now agree that the most satisfactory surgical results have been obtained following the Heller, or modified Heller, procedure. Surgery can relieve only the obstruction resulting from failure of relaxation of the lower esophageal sphincter. No known procedure can restore normal motility. The esophagogastric mechanism that prevents reflux must be preserved while a part, or all, of the mechanism that blocks passage from the esophagus to the stomach must be eliminated. The vagus nerves must be identified and preserved, for if they are injured

pyloric obstruction may occur and reflux may be aggravated. Postoperatively, in the modified Heller procedure, or esophagomyotomy, the suprahiatal portion of this nonrelaxing zone of increased pressure was completely abolished, but the subhiatal portion was partially retained. This remnant prevents esophageal reflux but the residual pressure is low enough to be overcome by the pressure of deglutition. Regurgitation and esophagitis are prevented by not cutting the muscle responsible for the subhiatal zone of increased pressure.

Surgery of any kind, however, should rarely be necessary in cardiospasm because a properly executed, forceful dilatation of the narrowed segment is remarkably successful. The dilating instrument, a bag inflated under air or water pressure, must of course be positioned accurately, and this means positioning under fluoroscopic control, not merely inserting the instrument for a certain distance beyond the incisor teeth.

Summary and Conclusions

1. The symptoms of achalasia include dysphagia, substernal pain, regurgitation, and weight loss.

2. Degeneration of the ganglion cells of Auerbach's plexus has been demonstrated in patients with achalasia. The cause of this is not known.

3. Studies of the esophageal motility in patients with achalasia reveal a generalized disorder of motility which involves most of the esophagus.

4. The gastro-esophageal vestibule does not relax due to absence of normal myenteric conduction of the peristaltic wave.

5. The most important phase of treatment consists in the adequate dilatation of the gastroesophageal vestibule.

6. The modified Heller procedure, esophagomyotomy, offers the best result if and when surgery is justified.

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Diphtheria in Louisiana--1958

• The authors report an alarming incidence of diphtheria in Louisiana during 1958.

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FIGURES released by the National Office of Vital Statistics for the year 1958 show that the total cases of diphtheria that occurred in the United States during the year totaled 896. This was a decrease of 23.9 per cent from a total of 1,178 cases in 1957, and, for the first time since reports of communicable diseases became available for the country as a whole, total diphtheria cases ran below 1,000. In marked contrast is Louisiana's record for 1958.

Incidence

A total of 89 † cases were reported within the state last year. This is a four-fold increase over the 22 cases reported in 1957 and far in excess of the average of the three preceding years—the mean number of cases for the period 1955 through 1957, inclusive, is 36.3. Eleven parishes (see footnote †) reported one or more cases of diphtheria during the year. Table 1 shows the cases reported by parish and the incidence in the various age groups.

It should be noted that a total of 51 cases, or 57.3 per cent, occurred in the 0-5 year age group and 26 cases, or 29.2 per cent, in the 6-10 year age group. Three deaths were reported from diphtheria, one each in the parishes of Washington, Avoyelles and St. Tammany.

Table 2 shows the number of diphtheria cases according to month of onset, for the four years 1955 through 1958:

It will be noted that as far as 1958 is concerned, only 9 cases were reported through August. The real outbreak began in September, in which 33 cases were reported and this increased incidence continued through the rest of the year.

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† After completing the tabulations contained in this report, 3 additional diphtheria cases were reported belatedly, but with onset occurring in December of 1958. Two of these cases were reported from Richland Parish and the other from Ouachita Parish, so that actually the total number of cases reported was 92, although the tabulations above all indicate a total of 89. Moreover, laboratory confirmation of these three cases has not been received at the present writing.

TABLE 1
INCIDENCE BY PARISH AND AGE GROUP

Parish	0-5 Yrs.	6-10 Yrs.	11-15 Yrs.	Over 15 Yrs.	Total
Assumption	W-1				1
Avoyelles		W-1	W-1		2
Calcasieu				C-1	1
Jefferson	C-2		C-2		4
Orleans	C-37	C-17 W-1	C-2	C-4	61
St. Tammany	W-3	W-4	W-1		8
Tensas	C-1				1
Terrebonne	W-1 C-3	C-2	C-1		7
Washington	W-3	W-1			4
TOTAL	W-8	W-7	W-2	W-..	W-17
	C-43	C-19	C-5	C-5	C-72
	51	26	7	5	89
	57.3%	29.2%	7.9%	5.6%	

TABLE 2
MONTH OF ONSET

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
1958	—	1	3	1	—	—	—	4	33	12	10	25	89
1957	—	—	2	3	—	—	1	1	2	5	7	1	22
1956	5	—	6	3	4	1	3	1	2	2	9	2	38
1955	6	2	5	2	—	—	2	6	1	2	18	5	49

TABLE 3

Age Group	Fully Vaccinated	Lapsed	Inadequate	None	Unknown	Total
0- 5 yrs.	12	7	3	18	4	44
6-10 yrs.	2	8	1	7	1	19
11-15 yrs.	2	2	1	3	—	8
Over 15 yrs.	—	1	—	4	—	5
	16	18	5	32	5	76
Still under investigation						13
					TOTAL	89

Immunization

An effort was made to evaluate the immune status of each case of diphtheria. It should be pointed out that it was very difficult to come to any definite conclusion in many of these cases. In most instances, no record could be referred to and the only source of information concerning the vaccination status of the child was the history given by the mother. In many cases the mother could not remember whether or not the child ever was vaccinated. Quite frequently the mother would state that she knew the baby had some shots some time ago, but she was not sure what they were. From what information was obtainable, the cases were divided into the following categories: (1) Fully vaccinated—having received the full primary series of three injections and a booster within the past three years; (2) Lapsed—having received the primary immunization but no booster within the past three years; (3) Inadequate — having received one or two initial shots but not the complete primary immunization.

Table 3 gives the immunization status by age groups.

Immunization Procedure

The immunization procedure, as recommended by the Louisiana State Board of Health, is to begin immunization at one or two months of age. Three intramuscular injections of 0.5 cc. each of alum precipitated combined diphtheria-tetanus toxoids with pertussis vaccine should be given four to six weeks apart, followed by a similar injection six to twelve months later. A booster injection of 0.5 cc. of the same material should be given before the child starts school. The school-age child's immunity should be kept up by injections of 0.5 cc. alum precipitated combined diphtheria-tetanus toxoids, administered every three or four years until the age of 12 years.

Children over the age of 12 years and adults should not be immunized with this material without first being given a Schick test, to determine whether or not there is any need for further immunization. Even then, if the Schick test is positive, a sensitivity test should be applied intradermally before administering the vaccine. Because it has not been deemed to be good public health practice, the Schick and sensitivity tests are not given in the local health units. Consequently, children over the age of 12 years and adults are referred to their private physicians for immunization against diphtheria.

However, a new type of diphtheria-tetanus toxoids combined, ultrafined—especially for adult use (containing approximately one-tenth of the amount of diphtheria antigen as in the regular vaccine) is now available. The use of this new adult type vaccine may obviate the necessity for the Schick and sensitivity tests when immunizing older children and adults.

Long-Term Treatment of Hypertension with Rauwolfia Serpentina

• The author reports satisfactory results with long-term use of rauwolfia in the treatment of hypertension.

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AMONG reports which have appeared in the medical literature on the use of rauwolfia in the treatment of hypertension [1-6] are several which describe long-term therapy with this substance.[1-2] Prolonged administration of a medicament with safety is, of course, of special advantage in treating a disease like hypertension. The present paper offers additional evidence that rauwolfia remains safe and effective during prolonged administration to hypertensive subjects.

Over the past four years, the writer has employed a preparation of whole root Rauwolfia serpentina (Raudixin) as a hypotensive agent, sometimes as the sole hypotensive agent and at other times in combination with other blood pressure lowering drugs. Some patients have been followed continuously for as long as three years. In general, Raudixin has proved to be a highly satisfactory agent for prolonged therapy in hypertension without serious toxic effects. The present report briefly outlines that experience with Raudixin.

Methods and Materials

The Patients

A total of 38 hypertensive patients comprise this series. All were adult and all were ambulatory. Twenty-eight were female and 10 were male. For purposes of study, the patients were divided into three groups according to the severity of the hypertension present. (See Table 1). One patient had a history of thyroidectomy. Diabetes was also present in 2 other patients and chronic bronchitis in still another. Heart disease was a complicating factor in 2 additional patients.

Raudixin was administered as the sole hypotensive drug to 24 of the 38 patients; 14 received, in addition, a preparation of pentolinium (Ansolysen). (See Table 1) Raudixin was administered in doses of 50 or 100 milligrams for total daily doses ranging from 100 to 400 milligrams. Therapy was continued for the periods given in Table 2.

TABLE 2
DURATION OF THERAPY

Period of Treatment (Months)	Number of Patients
Up to 12	8
12 to 24	22
25 to 36	8

Results

The effects observed following the administration of Raudixin, either alone or in combination with ansolysen, are sum-

TABLE 1
THE PATIENTS

Groups *	No. of Patients		Treated With	
	Male	Female	Raudixin Alone	Raudixin & Ansolysen
I	4	3	5	2
II	23	5	18	10
III	1	2	1	2
TOTAL	28	10	24	14

* Group I Patients with diastolic pressures of at least 90 mm. Hg but less than 100 mm. Hg.
Group II Patients with diastolic pressures of 100 to 119 mm. Hg.
Group III Patients with diastolic pressures of 120 mm. Hg. or higher.

TABLE 3
SUMMARY OF RESULTS WITH RAUDIXIN AS SOLE HYPOTENSIVE AGENT

Group *	No. of Patients	Average Mean Pretreatment B.P. (mm. Hg) †	Average Mean Post-treatment B.P. (mm. Hg) †	Average Mean fall in B.P. (mm. Hg) ‡	No. of Patients receiving normal B.P. levels §
I	5	141	112	29	5
II	18	148	125	23	8
III	1	180	150	30	0
		SUMMARY OF RESULTS WITH RAUDIXIN PLUS ANSOLYSEN			
I	2	141	126	15	0
II	10	155	137	18	2
III	2	171	138	33	0

* See footnote Table 1

† Average mean B.P. $\frac{\text{(total systolic+total diastolic)}}{\text{2 (No. of patients)}}$

‡ Difference between average mean pretreatment B.P. and average mean post-treatment B.P.

§ (A mean arterial pressure of 120 mm. Hg or less)

marized in Table 3. In 13 of the 24 patients who were given Raudixin as the sole hypotensive drug, blood pressure levels declined to normal (a mean arterial pressure of 120 mm. Hg. or less). Eighteen of the 24 patients experienced a fall in diastolic pressure of more than 10 mm. Hg. (See Table 4). In one patient there was a rise in the mean arterial pressure of 9 mm. Hg. Though the patient's general condition was good, Raudixin was discontinued and Ansolysen prescribed.

Blood pressure levels declined to normal levels in 2 of the 14 patients given both Raudixin and Ansolysen (Table 5), while in 8 of the 14 there was a fall in diastolic pressure of more than 10 mm. Hg. In 1 patient there was a rise in the mean arterial pressure of 28 mm. Hg. (Table 4) Severe emotional instability was present in this patient which may have contributed to the difficulty encountered.

Improvement in such symptoms as headache, chest pain, dizziness and shortness of breath was seen in the majority of treated patients. One patient with excessive edema of feet and congestion of both lungs improved with treatment for a period of two months, then had recurrence of cardiac failure and expired. This was due to the patient's failure to remain on digitalis and diuretics.

TABLE 4
DECLINE IN ARTERIAL PRESSURE WITH RAUDIXIN AS SOLE HYPOTENSIVE AGENT

Decline in Systolic Pressure	No. of Patients from Groups †			Decline in Diastolic Pressure	No. of Patients from Groups			Mean Fall *	No. of Patients from Groups		
Mm. Hg	I	II	III	Mm. Hg	I	II	III	Mm. Hg	I	II	III
0	0	1‡	0	0	0	2§	0	0	0	1**	0
1-10	0	1	0	1-10	0	4	0	1-10	0	3	0
11-20	1	3	0	11-20	5	5	0	11-20	1	3	0
21-30	0	3	0	21-30	0	5	1	21-30	1	4	1
31-40	1	6	0	31-40	0	2	0	31-40	3	5	0
41-50	1	2	1	41-50	0	0	0	41-50	0	2	0
51-60	1	1	0	51-60	0	0	0	51-60	0	0	0
61-70	1	1	0	61-70	0	0	0	61-70	0	0	0
70 and over	0	0	0	70 and over	0	0	0	70 and over	0	0	0
TOTAL	5	18	1	TOTAL	5	18	1	TOTAL	5	18	1

* Mean fall is ½ [(pretreatment systolic+pretreatment diastolic)-(post-treatment systolic+post-treatment diastolic)]

† See footnote Table I.

‡ A rise of 16 mm. Hg systolic occurred.

§ In one of these patients there was a rise of 2 mm. Hg diastolic

** There was a mean rise of 9 mm. Hg.

TABLE 5
DECLINE IN ARTERIAL PRESSURE WITH RAUDIXIN AND ANSOLYSEN

Decline in Systolic Pressure	No. of Patients from Groups †			Decline in Diastolic Pressure	No. of Patients from Groups			Mean Fall *	No. of Patients from Groups		
Mm. Hg	I	II	III	Mm. Hg	I	II	III	Mm. Hg	I	II	III
0	0	1‡	0	0	2	2§	0	0	0	1**	0
1-10	0	1	0	1-10	0	2	0	1-10	1	1	0
11-20	1	3	0	11-20	0	4	1	11-20	1	5	0
21-30	0	2	0	21-30	0	2	1	21-30	0	1	0
31-40	1	1	1	31-40	0	0	0	31-40	0	1	2
41-50	0	0	1	41-50	0	0	0	41-50	0	1	0
51-60	0	0	0	51-60	0	0	0	51-60	0	0	0
61-70	0	1	0	61-70	0	0	0	61-70	0	0	0
70 and over	0	1	0	70 and over	0	0	0	70 and over	0	0	0
TOTAL	2	10	2	TOTAL	2	10	2	TOTAL	2	10	2

* See footnote Table 3.
† See footnote Table 1.
‡ A rise of 30 mm. Hg systolic occurred.
§ A rise of 25 mm. Hg diastolic occurred in one patient.
** A mean rise of 28 mm. Hg occurred.

Side effects were generally few and constituted no serious problem. The incidence of recorded reactions appears in Table 6.

TABLE 6
INCIDENCE OF SIDE EFFECTS

Side Effect	No. of Patients
Nasal Stuffiness	5
Weight Gain	3
Fatigue	1
Loose Stools	1

Discussion

The results of this study confirm the findings of others [3, 4, 6] that whole root Rauwolfia serpentina, administered alone or in combination with other hypotensive drugs, satisfactorily lowers the blood pressure in a significant number of hypertensive patients. The prolonged administration of this drug to most of the patients studied, without serious toxic effect, demonstrates that whole root rauwolfia in the dosages given, may be well tolerated for continuous therapy lasting for months or even years. This lack of serious toxicity is of paramount importance in treating a chronic disease like hypertension.

Summary

Thirty-eight patients with hypertension were given Raudixin daily, either as the sole hypotensive agent, or in combination with Ansolysen, for periods up to thirty-six months. Total daily doses of Raudixin ranged from 100 to 400 milligrams. In 13 of the 24 patients who received Raudixin alone and in 2 of the 14 on combined dosage, the blood pressure declined to normal levels (a mean arterial pressure of 120 mm. Hg or less). The best response was exhibited by patients with mild disease. Symptoms of headache, dizziness, chest pain and shortness of breath improved in the majority of the treated patients. Side effects were minimal and few.

Raudixin is a highly satisfactory agent for prolonged treatment of hypertension.

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The Local Physician and Infant Deaths*

• In a brief article, the author calls to the attention of the local physician the possibility of reduction in infant mortality.

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THE advances made in the field of maternal and child health during the past three decades are evidenced by the spectacular reduction in the maternal, infant and stillbirth mortality.[1] For example, in 1956, maternal mortality incidence to pregnancy and childbirth has decreased to approximately 4 per 10,000 live births, thus showing a reduction of 75 per cent in the past ten years. (Table 1).

Proper Investigation of Causes

The many factors responsible for this progress have been well documented elsewhere. However, it is important to compare the mortality rates of Louisiana with the United States as a whole, in order to evaluate our own progress. A study of these data indicates that Louisiana enjoys a lower maternal and infant mortality than most of the other Southern and Southwestern states.. Further analysis of these data, shows definitely that much remains to be accomplished on a local level. More aggresive programs aimed at determining the exact causes of mortality and morbidity in both mothers and infants, are urgently needed. These programs should include, in addition to careful pathological and clinical studies, methods of prompt dissemination of this information to physicians and local health departments.

The reduction in the number of deaths in premature infants is certainly a major accomplishment of our times. In this field however, much remains to be done, and improvement will depend on further progress in medical science and public health.

As a result of numerous previous studies it has been shown that statistics, to be of any value in studying the cases of *infant death*, must be based on data accumulated from properly done post-mortem studies which are correlated with satisfactory clinical histories. On the basis of such investigation it is not felt that prematurity per se, with rare exception, is an acceptable cause of death. Deaths in prematures are due to abnormal pulmonary ventilation, birth injuries, and infection in a manner similar to that of full term infants.

According to Bundesen,[2] in all weight groups of live born infants, the causes of death in the first week of life are abnormal pulmonary ventilation 60 per cent; malformations 12 per cent; blood dyscrasias 4.9 per cent; injuries at birth (including anoxic intracranial hemorrhage) 9.5 per

* Presented at the Seventy-eighth Annual Meeting of the Louisiana State Medical Society, Shreveport, May 6, 1958.

TABLE 1
SELECTED MORTALITY RATES PER 1,000 LIVE BIRTHS FOR LOUISIANA AND UNITED STATES, 1927-1956

Year	Infant Mortality				Maternal Mortality				Still-births			
	United States	Louisiana			United States	Louisiana			United States	Louisiana		
		Total	White	Negro		Total	White	Negro		Total	White	Negro
1927	64.6	77.4	58.4	108.9	6.5	9.1	7.0	12.5	38.8	53.9	37.0	81.8
1937	54.4	65.2	53.5	81.3	4.9	7.4	6.0	9.2	33.4	45.3	33.3	61.8
1947	32.2	37.3	29.7	50.6	1.3	1.9	1.4	3.0	21.1	26.9	18.0	42.1
1956	26.0	30.6	22.5	42.9	0.4	0.5	0.2	0.9	17.2*	18.6	13.7	26.1

* Rate for 1955.

cent; infections 6.8 per cent, and anoxia and miscellaneous 6 per cent.

Inspection of these data reveals that pulmonary hyaline membrane syndrome (abnormal pulmonary ventilation) is our most challenging problem since it accounts for over 60 per cent of all deaths in the first week of life. Over the age of one week other factors assume greater importance such as infections and congenital malformations. Due to prevalence of antibiotic resistant staphylococcus, this infection in the future may assume greater and more serious proportions.

Reduction of Mortality Rates

How much further may the present mortality rates be reduced? Our estimates of this change from time to time as our knowledge broadens as to causes. These causes can only be elucidated by data accumulated in careful scientific studies.

For the year 1956, there were reported 46 maternal deaths, 1674 stillbirths, and 2751 infant deaths. The stillbirths and infant deaths exceeded the number of lives lost in the age period from 1 to 44 years. If we extend our scope to include the losses due to abortion, our problem grows more challenging. Not only are we concerned with increasing the quantity of survival, but perhaps of even greater concern is improvement in quality of survival. To what extent might the incidence of premature birth, congenital anomalies, cerebral injury, and mental defect be prevented? In actuality our purpose goes beyond the reduction and prevention of mortality and morbidity to the goal of positive health for the child, his family and the community.

The reduction in infant mortality has occurred mostly after the first week of life. Mortality under one week has declined less than mortality under one month. Of the 2751 infant deaths reported in Louisiana in 1956, 30 per cent occurred during the first day of life, and 60 per cent during the first week of life. Thus we see the need for greater efforts over that first most important day. Deaths in the first week are largely due to prenatal and natal causes. It is evident that the problems are concentrated in the perinatal period (from twentieth week of gestation through the sixth day of life) and it is to these we must direct our attention to achieve substantial reduction in maternal, stillbirth, and infant losses.

The correlation of perinatal mortality with socio-economic and socio-medical factors has been generally recognized. A recent study [3] has shown that variation from parish to parish of such factors as income, housing, sanitation, stagnation of the local economy, and accessibility of medical care are accompanied by variations in infant and perinatal mortality. Such information indicates in general where the problems are concentrated. It gives direction as to where the development of control methods would more dramatically reduce mortality. If detailed studies as to causes could be initiated in those parishes where such mortality is the highest, headway could be made in determining the proper steps to be taken to alleviate the situation. Such detailed studies could only be done by cooperation of local physicians with local health departments. Already many local physicians are working closely with the preventive and control programs in their parishes, on these important questions.

Summary

I would like to point out that the idea behind this paper is to call to the attention of local physicians that it should be possible to further reduce infant mortality; that the mortality rate is highest in those parishes with the worst socio-economic factors and that the public health agencies would be glad to help in whatever manner might be worked out in cooperation and with the suggestion of local physicians.

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Prophylactic Planing of the Aged Patient for Cancer of the Skin*

• Results of planing over 500 patients for precancerous cutaneous lesions indicate that the procedure is effective not only in improving the cosmetic appearance of disfigured or aged skin, but also, in managing certain cutaneous diseases, removing visible precancerous keratoses, and preventing or delaying development of new precancerous and cancerous lesions in apparently normal aged skin.

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CONTINUED advances in medicine are succeeding in prolonging the life span of mankind more and more; a new goal of one-hundred and fifty years has been predicted in the lay press. This apparent medical advance might, ironically, result in dissatisfaction of many persons to whom the external manifestations of aging are unacceptable, were it not for the advent of surgical planing.

This technic, also known as wire brush surgery or dermabrasion, is an office procedure that involves use of a high-speed rotary wire brush or abrasive wheel and a local refrigerative anesthetic to remove levels of skin and thus obliterate cutaneous defects. Healing takes place beneath a crust in a manner similar to the healing of a brush burn. Initially restricted to correction of scars, this procedure is now used for other cosmetic defects and certain cutaneous disorders. Whether planing is more valuable in obliterating scars of adolescent acne or of cutaneous changes of the aged is controversial.

A recent analysis of patients from the Tulane Planing Clinic at Charity Hospital indicated that many more sought correction of senile changes of the skin than of scars or other defects. This undoubtedly reflects subjective as well as objective success. Furthermore most patients in this group were planed not because of cosmetically undesirable premature signs of aging (Figures 1 and 2), as is the case in private practice, but for advanced clinically and pathologically manifest senile changes (Figure 3).

These subjects are usually farmers, sailors, fishermen, or persons with weather-beaten skin; for the most part, they are fair-skinned, redheaded, blonde or cha-

Figure 1. (a)—Wrinkles and keratoses of aged skin before planing.

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Figure 1. (b)—Six months after planing cheeks. Eleven months after planing forehead. Note cosmetic improvement.

taigne, blue-eyed persons of the southwestern and Gulf Coast states who are susceptible to development of precancerous and cancerous diseases of the exposed surfaces of the skin. Clinical and pathologic changes in their skin are similar to those resulting from chronic exposure to radiation. Early in life, these persons seek dermatologic care for superficial keratoses; later, they return for removal of advanced keratoses and epitheliomas. Whether these lesions are treated by excision, cauterization, or radiation, the patient is reluctant to accept the resulting cosmetic defect. He finds unsatisfactory the prophylactic advice to avoid exposure to the sun and to lubricate the skin, and the physician realizes that it is too late to prevent the inevitable changes initiated by ancestry and preceding years of exposure to the elements.

The present discussion is concerned primarily with the objective results of planing such precancerous keratoses as keratosis senilis and those keratoses caused by exposure to sun, arsenic, radiation, as well as certain superficial and relatively benign types of epitheliomata. Cosmetic improvement that results from removal of these lesions, as well as those with less malignant potentialities, such as the seborrheic keratoses, wrinkles, and pigmentation, is apparent.

Procedure

More than 500 patients have been planed for precancerous lesions in my private practice and in the Tulane Planing Clinic of Charity Hospital at New Orleans. The technic was essentially that described in previous publications.[1, 2] A mixture of ethyl chloride and dichlorotetrafluroethane was used as a local anesthetic. Abrasion was usually accomplished with a wire brush of the Kurtin type. Coarse diamond fraises were used for superficial keratotic lesions and areas involving the hairline, ears, eyes, nose, and mouth.

Patients subjected to full face planings at Charity Hospital were hospitalized pri-

Figure 2. (a)—Seborrheic keratoses of aged skin.

Figure 2. (b)—Four and a half months after planing. Note cosmetic improvement.

marily for postoperative studies, the results of which have been reported elsewhere.[3] Their ages ranged from 42 to 85 years. Various anatomic sites were planed, the face and dorsa of the hands most frequently. These studies confirmed previous observations that the face provides the most favorable anatomic site for planing. The thinness of the skin of the dorsa of the hands, with the relative lack of appendages and mobility, was apparently responsible for delayed healing and less desirable cosmetic results.

Planing has several advantages over well-established routine methods of destruction, such as cauterization, desiccation, and radiation.[2] The technic provides an unobscured, bloodless operative field. Because healing takes place without scarring, the size of the area to be eradicated is not limited by any pressure; large planed areas heal almost as readily as small ones. Within a few hours after planing, the epithelium begins to regenerate and, in some cases, is complete within seventy-two hours; whereas after cauterization or desiccation, sloughing of tissue is required before repair begins, thus encouraging infection. Furthermore, the scars from burns and radiation are precancerous lesions. Operation for removal of multiple superficial keratoses of the face, however efficient, remains impractical.

Results

Keratoses:—Regardless of the method of removal of individual keratotic lesions, recurrence at or near the operative site is frequent. Certain cutaneous areas, such as the ears, nose, temples, and malar prominences, are susceptible sites of multiple keratotic lesions. The presence of multiple scars at treated sites would tend to support the concept that whatever change has taken place in the skin involves a wider area than the individual lesion itself (Figure 3a). For this reason, when multiple keratoses involve an area like the nose, the entire nose is planed rather than the individual lesions. To such a

Figure 3. (a)—Precancerous and cancerous lesions of 55 year old man.

Figure 3. (b)—Close-up of 3a, showing keratotic state of skin adjoining and impinging upon corrective graft.

Figure 3. (c)—Four months after planing. Residual keratoses near graft removed by second planing.

patient, this prophylactic approach to the problem is practical and readily acceptable.

The routine care of a patient with multiple keratoses of the face involves frequent periodic examinations, preferably by the same physician, to determine which keratoses are sufficiently advanced to require removal and which deserve biopsy. To the well indoctrinated patient, it is often apparent that certain lesions are growing and in need of professional care. Regardless of how enthusiastic an advocate of biopsy the physician may be, he must be practical and rely on his clinical diagnostic acumen to determine which lesions require laboratory examination.

In the present series of patients, biopsy of advanced keratoses was carried out before planing, not only to determine whether they were malignant, but also to ascertain the depth of planing necessary for complete removal of the lesion. Advanced senile keratoses and early intra-epidermal epitheliomata were accepted for planing; whereas invasive squamous cell carcinomata were treated by other means. As in previous planing experience, these keratotic lesions did not require heavy pressure upon the abrasive tool or prolonged planing over the site, since epithelial tissue is readily removed by planing and normal connective tissue offers a certain amount of resistance to the instrument. In fact, the routine abrasive stroke, as it passes across the skin, spontaneously causes deeper digging into these sites and tends to meet resistance as normal connective tissue is impinged upon. The operator's cognizance of the presence of more advanced lesions undoubtedly leads to more thorough planing over these sites.

Radiodermatitis:—Scars from radiation that are devoid of appendiceal epithelial regenerative sites are not considered to be amenable to cosmetic improvement by planing, since healing must take place by secondary intention from the edges of

the wounds, resulting in scarring. It would seem, then, that the decision to plane radiated skin should be based not on the amount of exposure to radiation, but on the stage and degree of radiodermatitis that exists or, more specifically, on the presence or absence of appendages. Most of the patients in this series, subjected to full face planing, had one or more scars 1 to 3 cm. in diameter that had resulted from therapeutic radiation for cutaneous cancers. These sites were planed not only for cosmetic improvement but for removal as precancerous lesions. As would be expected, the extent of delay in healing was directly related to the size of the scars. Larger scars from radiation were cobblestoned with punch grafts and subsequently planed.

Early in planing of acne scars, many patients were observed to have evidence of radiodermatitis as a result of previous radiation for acne. In those with patent orifices of appendages, healing and cosmetic results were comparable to those involving unradiated skin. This response was anticipated in view of the fact that senile cutaneous changes, whether they occur naturally as a result of the aging process or prematurely from exposure to the weather, are similar to those found in certain stages of chronic radiodermatitis. Both states may be associated with atrophy of epidermis, dermis and appendages, elastosis, telangiectasis, keratoses, and epitheliomata.

Although on clinical and pathologic examinations after planing no evidence has been found of recurrence of these superficial signs of damage from radiation, these observations must be considered preliminary because of lack of paired control sites and the relatively short postoperative period of observation. Late sequelae of radiation, such as ulceration resulting from damage to deeper vessels, should not be influenced by such a superficial procedure as planing. Preliminary results in planing of such sites of radiation have prompted studies to determine the value of this procedure as prophylaxis against superficial damage from radiation of the skin.

Epitheliomata: — The present report, which concerns experiences in the use of a new treatment of certain specific types of epitheliomata, is not intended to prove or disprove the efficacy of the various accepted methods for treatment of cancer of the skin. Certain of these have proved unsuitable as routine treatment, either because of the use of unjustifiable radical measures for relatively benign neoplasms (unfortunately bearing the name of cancer) or because the morphologic variations prevented satisfactory response. The specialist's primary aim in treatment of these lesions should be complete removal, his secondary consideration a satisfactory cosmetic result. The wire brush has proved to be an efficient tool capable of penetrating to desired or, unfortunately, even undesired depths. A capable operator, however, using an efficient instrument (wire brush), can plane as much tissue as necessary for adequate removal of such tumors.

In the present series of patients, lesions of suspicious epitheliomatous character were subjected to biopsy for definitive classification as well as for estimation of the depth of radiation. Naturally, only superficial lesions were accepted for planing. Among the group planed were patients with superficial, nonulcerated, early, basal cell epitheliomata, Bowen's disease, (intra-epidermal carcinoma), superficial epitheliomatosis, benign cystic epitheliomata (Brooke's tumors), syringomata, and cylindromata (Figure 4). Incidence of recurrence of these lesions after planing has certainly been no greater, and has probably been less, than with other methods of treatment. Unquestionably, the average cosmetic result, in spite of the operator's enthusiasm for total extirpation, has been far superior. Here again, as with radiodermatitis, results are preliminary because of the relatively short postoperative period.

Summary

Results of planing over 500 patients for precancerous cutaneous lesions indicate that the procedure is effective not only in

Figure 4. (a)—Multiple benign cystic epithelioma.

Figure 4. (b)—Five months after planing. Note cosmetic improvement and residual lesions.

improving the cosmetic appearance of disfigured or aged skin but also in managing certain cutaneous diseases, removing visible precancerous keratoses, and preventing or delaying development of new precancerous and cancerous lesions in apparently normal aged skin. Unplaned skin of these patients provided satisfactory control for evaluating results of treatment. Although it is too early to predict the duration of the effect, some patients who have been observed for as long as four years after planing have had no recurrence of their preoperative keratotic state.

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Board of Health and Yellow Fever

We stated in our last number that the Medico-Chirurgical Society of Louisiana had been constituted by the General Council a Board of Health for the City of New Orleans; also that nine of its members had been appointed by this Society a Committee of Public Hygiene, whose duty it is to attend to all sanitary regulations. One of the first objects of attention with this committee was to ascertain the origin of Yellow Fever in this City. With this view, they kept a vigilant eye to everything of a local nature that might give rise to the disease, and at the same time they called upon the Collector of the Port of New Orleans, and requested him to have reported to them whatever sickness there might be on board vessels coming in. These orders, however, were not attended to, and several vessels from Vera Cruz and the West Indies, where Yellow Fever was prevailing, were permitted to enter without examination; but it has not been ascertained that any of them had sickness on board. * * * Those who believe the disease to be **infectious**, and that to prevail here, it is necessary for it to be imported from abroad in some manner, are not satisfied with the observations that have been made upon ships coming into port this year. In future they will probably be more rigid.

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Fundamentals in the Management of Asthma

• The authors outline the treatment of asthma together with their views on the use and misuse of the steroids in its management.

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Prologue

WE are currently seeing a great enthusiasm for the highly potent steroid hormones in the treatment of asthma. While these hormones have their proper place, they should not be used in many cases. Most patients will have an adequate response to simpler and less hazardous medications. More important may be the fact that proper allergy managment is not being utilized. It is a sad fact that too many physicians feel that the treatment of the asthmatic begins and ends with one steroid or another. We are all familiar with the fact that undesirable side reactions may accompany their use. As a matter of fact, it has recently been pointed out that the mortality in asthma has not decreased since the steroids have been available.[1]

To the allergist, these drugs should only be used in exceptional cases, especially in those who have been proven to be unresponsive to more orthodox methods of management.

This introduction points up the fact that we need to re-evaluate certain basic fundamentals relating to the causes and treatment of asthma.

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Definition

Asthma is a chronic, allergic disease of the bronchiolar tree. It is characterized by wheezing, dyspnea, and intermittent cough productive of thick, tenacious sputum. *Status asthmaticus* is a persistent attack of asthma with dyspnea lasting for days or even weeks.

Classification of Asthma

While asthma may be classified in several ways, one of the most widely used methods is to regard it as being extrinsic or intrinsic. In the first group, we find patients whose asthma is due to something of an extraneous nature — an inhalant, food, pollen, mold spore, etc. In the latter group, clinically positive skin reactions are not observed, and the asthma is thought to be due at times to sensitization to some endogenously produced antigen, or associated with bacterial infection.

In another way, we may consider that asthma is due to an extraneous antigen (noninfective type); whereas in other patients, we may think that asthma is due to the presence of organisms or their products (the infective type). We may also have the mixed type which has both "infective" and "noninfective" components.

Another classification of asthma is the seasonal variety which is associated with sensitization to some pollen, mold, or inhalant antigen, the concentration of which varies with the season. The perennial type is often associated with infection. It frequently appears later in life, and may be

recurrent, chronic, progressive, and may be accompanied by emphysema.

Etiology:

Bronchial asthma is believed to be caused by a basic antigen-antibody reaction within a shock organ. In man, the bronchi and smaller bronchioles are the shock organs, along with the skin, and other organs. In other species almost any organ can be senstitized to some allergen and developed into a shock organ.

According to this theory the individual is first sensitized to a small dose of the offending substance—say, pollen, for instance. When next he inhales this same pollen, even in minute dosage, the respiratory tract is the site of a typical reaction and the usual symptoms common to asthma appear—wheezing, coughing, dyspnea, etc.

Specifically, many substances may cause asthma. It is interesting to note that most of them are protein in nature and all of them contain nitrogen. The most common precipitating antigens are as follows:

House dust	Animal danders,
Pollen	feathers and other
Bacteria	inhalant antigens
Mold Spores	Textiles and fabrics
	Foods

Pathogenesis

The major features of the asthmatic attack are:

1. Bronchospasm.
2. Edema of the mucosa.
3. Increased mucus production.

In asthma, goblet or goblet-like cells may be substituted for the normal columnar ciliated cells. Therefore, more mucus is secreted which may be intimately attached to the cells and therefore difficult to expectorate. Much of the respiratory distress of chronic asthma is caused by the presence of this mucus.

An allergic response such as is seen in the antigen-antibody reaction, may trigger the attack of asthma. The episode may also be initiated by nonspecific factors such as: emotions, fatigue, weather changes, chemical irritants, etc. Asthma has also been found to be associated with autonomic nervous system imbalance.

Pathology in Advanced Asthma

Examination of the sputum and nasal secretions shows distinctive features in the asthma patient. Freshly made slides show gelatinous globules which, when fixed, appear as typical Curschmann's spirals. Also seen are Charcot-Leyden crystals (long, pointed octahedrons varying in length from 25 to 50 microns.) When properly stained, smears of sputum and mucus contain large numbers of eosinophiles. In acute cases this increase of eosinophiles is often reflected in the peripheral blood which may include as many as 30 per cent of these cells; 5 to 10 per cent is a more common figure in the usual asthmatic.

Histologically, the bronchioles reveal a columnar type of epithelium with multiple goblet cells, loss of ciliated cells, and quantities of mucus, as well as a thickened basement membrane. The lumen is narrowed and the musculature is hypertrophied.

Alveoli are distended, septa ruptured and pneumonic exudation is seen at times. The arteries demonstrate thickened intima and in advanced cases, atheromatous changes, secondary to the pulmonary hypertension, result in cor pulmonale.

Diagnosis of Asthma

The typical asthmatic has difficulty in expiration, and wheezing breath sounds may be heard over the lung fields, usually from the apex to the bases. Hyperresonance may be obtained on percussion, which is due to acute emphysema. In the more or less subsiding cases, heavy rhonchi may be heard, which are due to the presence of plugs of mucus in the bronchi.

Cough is common and may be either nonproductive or yield a thick, stringy, mucoid sputum. Wheezing is pronounced, particularly during expiration, due to narrowing of the bronchiolar tree. Finally, in severe cases, emphysema develops; cyanosis may be seen late in the disease.

X-ray examination of the chest shows no characteristic findings in the early

acute case. Bronchovascular markings are sometimes increased, and after emphysema has developed barrel chest and fixed diaphragm are often observed.

Differential Diagnosis. "All that wheezes is not asthma!"—An old but true adage. This includes:

1. Disorders of the larynx which are associated with respiratory obstruction. Examples are: Spasm, croup, foreign body and neoplasms.
2. Disorders of the bronchi: Foreign body, neoplasms, bronchostenosis.
3. Disorders of lungs: Pneumonia, pneumoconiosis, neoplasms, tuberculosis, and granuloma.
4. Cardiac asthma: The differential diagnosis of this condition is very important, since the treatment may radically differ. For instance, morphine may be very important in the treatment of cardiac asthma—but the use of this drug is definitely contraindicated in bronchial asthma. Also, the use of epinephrine may be absolutely contraindicated in cardiac asthma. What is the answer? The circulation time test, if there is not sufficient opportunity for a careful study of the patient. Aminophyllin, intravenously, may at times be used in doubtful cases.
5. "Pseudoasthma:" Sighing respirations and hysterical over-breathing. Such conditions are seen at times, chiefly in females, and must be differentiated from true bronchial asthma.

There is the case of the fourteen year old girl who was brought in with a diagnosis of asthma. Auscultation of her chest did not reveal any rales. It was finally determined that her trouble was emotional rather than asthmatic. She was merely looking for parental sympathy.

Complications

Acute emphysema is always present in an attack of asthma, since typically the asthmatic has difficulty in expiration. As attacks recur, the condition of chronic emphysema develops. These patients may become hopeless respiratory cripples, and may have constant dyspnea. The amount of damage may be accurately measured by pulmonary function tests, which should include measurements of vital capacity, maximum breathing capacity, and timed vital capacity.

Both bronchial asthma and emphysema cause an impairment of ventilation of the alveoli, which results in a disturbance of CO_2 transfer and elimination. Therefore, there is an accumulation of CO_2 in the blood in addition to hypoxia.

The treatment of emphysema in our asthmatic patients is basically prophylactic. In the chronic asthmatic, each attack may lead to further emphysematous changes. All too often many patients with asthma have been treated with symptomatic medications which are merely palliative, then the patient asks for a stronger and then still a stronger drug. The main principle which should guide us is to search for the cause of the asthma.

Once emphysema has developed, as stated above, the patient may become a respiratory cripple. He may require oxygen, possibly under intermittent positive pressure. He may be unable to perform his usual duties in life. It is up to us to prevent this from occurring. Once this state is reached, certain exercises may be beneficial. Oral bronchodilators such as the choline salt of theophylline (Choledyl) provide therapeutic blood levels with none of the gastric irritation found with oral aminophylline, and improve vital capacity. An additional advantage of Choledyl is its safety and effectiveness for long term therapy without drug tolerance. Bronchodilators may be given in aerosol form. Steroid therapy may be helpful in acute crises, but continued use is not ordinarily indicated. Steroids may increase the caliber of bronchioles by relieving inflammation of the walls, but will not affect alveoli stretched and ruptured by long obstruction. Postural drainage may be helpful.

It is recognized that pulmonary function grows progressively less with advancing years, and chronic emphysema is never completely reversible. To some extent smoking may aggravate this condition.

It has been thought that a loss of elas-

ticity of the lungs is the primary cause of this condition. There is a collapse of the bronchioles causing resistance to air flow. This tendency is particularly accentuated during expiration. Finally, fibrosis and distended air sacs develop.

Other complications are: Bronchitis, bronchiectasis, atelectasis, bronchostenosis, bronchopneumonia, subcutaneous emphysema, pneumothorax, mediastinal emphysema, and cor pulmonale.

Specific Management of Asthma

General preventive measures. Diagnostic survey. First of all we must be sure that we are dealing with bronchial asthma. X-rays, blood and sputum studies, bronchoscopy, etc. should be used when indicated. As an example, many patients who complained of asthmatic symptoms have turned out to have tuberculosis, or some other pathological condition, such as bronchogenic carcinoma.

When we are sure that the patient has bronchial asthma, an allergy survey is definitely in order. The good allergist does not rely only on skin testing. There is no substitute for a careful meticulous history; questionnaires are not as thorough. This is because an allergy survey may be closely akin to detective work, and some points must be very carefully explored.

An example of this is the patient who would develop asthma every Sunday night. Careful questioning revealed that he would have dinner every Sunday with his mother. Being of a good Italian family, the *"piece de resistance"* was spaghetti. As we all know, spaghetti is made with wheat. This patient happened to be allergic to wheat. He could tolerate a minimal amount with no symptoms—but a big bowl of spaghetti would lead to wheezing!

This same reasoning could be carried on *ad infinitum.* Many a person may tolerate milk in their coffee—but a pint of milk may result in an allergic reaction.

Let us get away from asthma for a minute. A small boy was once brought to one of us with a chief complaint of eczema which was generalized. The boy had been skin tested by a physician and found to be allergic to egg white. The mother was told to avoid giving him eggs. Therefore, she refrained from giving him hard boiled or softboiled eggs, scrambled eggs, etc., but she continued to feed him cake, ice cream, custard, etc.—all of which contained eggs. Only after giving her a list of egg-containing foods, was the boy's eczema controlled.

The same basic truths also apply to suspected sensitization to inhalant substances. Often the history will supply the clue.

In general, we may say that skin testing with pollen, mold spores, and inhalant antigens is fairly accurate. However, even here we should try to correlate the history with skin test reactions. While it has been said that inhalant sensitizations begin and end with house dust and ragweed—this is definitely not the case, since many patients will prove to be allergic to many other antigens.

If we have a positive skin reaction to a certain antigen, and clinical sensitization is at all doubtful, cautious direct exposure tests are indicated.

It is conceded that skin testing is of doubtful help in many cases of food allergy. Negative skin reactions may be obtained in the presence of true clinical allergy, and on the other hand, positive reactions may occur for foods to which the patient is clearly not allergic. However, skin testing for foods may be helpful. Individual direct food tests are easy to do. The patient should avoid any suspected food, and every related food for seven days. Then the food is again eaten cautiously, and the presence or absence of symptoms is noted.

Another widely used technique is the restricted diet. In this method, foods are eaten that ordinarily do not cause trouble, or are not suspected. Then one food is added each day to the diet. The precipitation of symptoms when a food is added leads to suspicion.

It may, however, be necessary to eat the suspected food for several days, because in the instance of a commonly eaten

food, the symptoms may not appear immediately.

If the patient happens to be allergic to a certain pollen or mold spore, change of locale may help. However, few of our patients can afford to move during the season. Air conditioning or the use of a good air filter may be of tremendous help. Trips to the country should be avoided in pollen allergic patients during the time of pollination.

In the case of the patient who is allergic to some other inhalant antigen, contact should be avoided as much as possible. In the house dust allergic, full directions must be given for its avoidance. It is not generally recognized that immunization may protect against a normal amount of exposure—but not against a massive amount. The patient who is allergic to house dust must not only avoid houses or rooms which are dusty, but must also avoid rooms which are being cleaned, or have just been cleaned. House dust forms in mattresses and pillows, and therefore, dustproof covers are a "must." Sponge rubber or other non-allergenic materials are thought by some to be exceptions to this rule. On the other hand, the patient may be allergic to some substance such as rabbit hair. This material is found in many women's dresses, furs, men's felt hats, etc. If true clinical sensitization is proven, the patient should be provided with a list of possible contacts, in addition to being immunized.

It has been our experience that patients who give a positive skin test reaction to one of these more or less unusual inhalant antigens, will deny contact. An example is the patient who reacts to goat hair. They just do not realize that mohair and many other household materials are made either partly or principally of this substance.

Immunization

Immunization with pollen extracts gives a fairly consistent figure of 85 per cent good results. There are three varieties of specific treatment of this type: (1) Coseasonal, (2) preseasonal, (3) perennial. Best results are seen in the last category. Only temporary or moderate results are seen in the first. The second gives results almost comparable to the perennial method of treatment. Single dose therapy of respiratory pollen is currently being investigated.

From the standpoint of immunization to inhalant antigens, we find that more than 85 per cent of patients are benefited. We must remember that avoidance of the offending substance is of great importance. Also, we must remember that an antigen such as house dust will cause more trouble during the time of change of seasons, such as in the fall and spring. To a degree, it causes trouble throughout the winter, and to a lesser extent in the summer.

Bacterial vaccines (both stock and autogenous) are used in treatment by many allergists.

Contributing Nonspecific Factors

1. Weather.

It is well recognized that most patients with respiratory allergy will respond more or less simultaneously to weather changes. Most patients will state that changes in humidity and temperature will have an adverse effect. Changes in barometric pressure do not seem to have such an effect. The passage of a cold front seems to affect most patients adversely. Whether it is that fact or meteorologic phenomena remains to be seen. However, it has been specifically observed that weather changes affect most asthmatics.

2. Emotional.

Most allergic patients and asthmatics are benefited by a relaxed emotional state. Many patients are helped merely by a vacation.

On the other hand, many patients have an emotional problem. We need only to cite the case of the woman who would have asthma particularly after contact with her sister, to whom she was emotionally maladjusted. However, a careful allergy survey revealed true allergy to house dust, which was also a factor. The emotional upset would trigger the attack.

Therefore, it is important to emphasize to our patients that emotional tranquility

is a most desirable part of their treatment. The factor of stress should never be overlooked.

Symptomatic Treatment of Asthma

Remember the statements made under the pathogenesis of asthma; the treatment of the attack depends on these facts. As an example, if the attack is sudden, contraction of the bronchiolar musculture should be suspected, along with possible edema of the mucosa. Here the ideal treatment is epinephrine (Adrenalin) or ephedrine (both sympathicomimetic drugs.)

If the attack is chronic or recurrent, expectorants should be used. This would include iodides, chlorides, steam, and guaicol compounds. Antihistamines may have a place in the prevention and treatment of asthma. They may help coughing which is often a feature. On the other hand, a productive cough may be beneficial since it may help to get rid of plugs of mucus.

Any number of therapeutic agents have been used in the treatment of asthma, since it is such a common disorder. Bronchodilators, sympathicomimetic preparations, expectorants, etc., have all been used. The basic standby consists of a combination of ephedrine, theophylline and phenobarbital. Ephedrine, of course, is a sympathicomimetic drug; theophylline, a relaxant of bronchial musculature; and the phenobarbital helps to allay apprehension. This combination (Tedral) is quite reliable, safe, and is the most widely used. It will give relief to most patients with bronchial asthma. Tedral when used prophylactically in routine doses will prevent acute attacks. The drug will also block the acute attack if taken when the first symptoms are noticed.

Ephedrine or theophylline compounds may also be given individually in oral doses. Synthetic ephedrine compounds, such as Propadrine, may be used. Parenteral administration of epinephrine and aminophylline is sometimes used, as is nebulization with epinephrine and its analogues. Rectal preparations include aminophylline, either in the form of suppositories or in solution. A combination of ephedrine, theophylline and phenobarbital in the form of Tedral suppositories is helpful.

Treatment of Status Asthmaticus

In addition to the basic concepts of therapy outlined above, it becomes necessary in severe intractable asthma (status asthmaticus) to use exceptional therapeutic measures. The first procedure is a change of environment, to remove the patient from possible causative offending factors in the home. This is preferably accomplished by hospitalization in a dust proof environment. Correction of anoxia by cautious administration of oxygen may be life saving. Respiratory acidosis may be a complication. Potent bronchodilators such as intravenous aminophylline may be considered. Suitable antibiotics are required as well as correction of dehydration and electrolyte disturbance. Here steroids have their greatest usefulness as prescribed in recommended dosages. Sedatives may be required to allay the apprehension of the anxious patient. Narcotics are contraindicated. Bronchoscopy may be required to remove inspissated secretions which obstruct the airway.

Complications of Steroid Therapy

Basically we may consider that the complications of steroid therapy may be classified as either metabolic or anti-inflammatory:

1. Metabolic
   a. Disturbed carbohydrate metabolism
   b. Disturbed electrolyte metabolism
   c. Osteoporosis
   d. Retardation of growth and development in children
   e. Psychosis
   f. Hypertension
   g. Muscle weakness
   h. Relative adrenal insufficiency
2. Anti-inflammatory
   a. Masking of latent infection
   b. Breakdown of tissue
      1. Peptic ulceration
      2. Activation of quiescent infection (e.g. tuberculosis)

McMahon and Gordon [2] make the following statements. "It is to be emphasized that corticosteroids are seldom, if ever, curative and that their use should always be accepted as a 'calculated risk'." Later in the same article they say: "In view of all these side-effects, it is imperative that each patient be evaluated carefully before steroids are employed and that the minimal effective doses be used for the smallest necessary time interval".

Pearson [3] states "In particular the use of corticoids as the first choice of treatment cannot be deprecated too strongly".

Irwin and Burrage [4] feel that results to date indicate that long-term maintenance adrenocortical steroid therapy should be limited to patients with long standing asthma of undetermined etiology. McLean [5] also states that the injudicious use of steroid therapy is dangerous. Criep [6] states that triamcinolone is not to be used as a substitute for careful medical and allergy management. He also points out that there are real dangers which accompany its use, as with all corticosteroids and with corticotropin. Unger [7] emphasizes that corticotropin and cortisone preparations should be used only after the failure of standard measures.

Based on the experiences outlined above, may we make a plea for the return to the more basic fundamentals in the management of bronchial asthma.

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Medical Societies of New Orleans

It is with pride and great pleasure that we are enabled to refer to the spirit and energy with which the medical societies of our city are conducted at the present time; for it affords the best evidence of the reformation that has taken place in the profession within a recent period. Two years ago there was not a medical society in operation in the city of New Orleans—there was no union among physicians; no combination of effort to elucidate the nature and causes of disease, or to aid and enlighten each other in the arduous business of practice.* * * Now we have two medical societies in constant operation, comprising nearly all the respectable physicians of the city, and in accordance with the veritable adage, "E collisione scintilla," an impulse has been given to medical investigation, and intellectual power will be developed.

The Louisiana Medico-Chirurgical Society was incorporated by an act of the State Legislature, dated April 1, 1843.

The Physico-Medical Society was established many years since, and we are informed was formerly kept up with much spirit; but from some cause it was suffered to languish, and for five years past its operations have been entirely suspended. It affords us much pleasure to announce the reorganization of the Society, and from the union and energy which seem to prevail in its councils, we are induced to anticipate the most auspicious results.

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Editorial

Mass Education and Immunization Program Against Tetanus

It would be well for the physicians of Louisiana to undertake a mass education and immunization program against tetanus. This disease is far more prevalent in Louisiana than in other areas. There are too many situations in which we are first where it would be better if we were last. The prevalence of tetanus is one of these.

Tetanus is almost a wholly preventable disease. The efficacy of tetanus toxoid in prevention is shown by the U. S. Army experience during World War II. Only one soldier died after having been properly immunized against tetanus with toxoid out of 2,734,812 hospital admissions for wounds and injuries, in each of which tetanus was a possible exposure. In contrast with this, in Louisiana, in the ten year period 1948 to 1957, there were 341 cases of tetanus with 189 deaths, or a mortality rate of 55 per cent. This is equivalent to an annual incidence of 1 per 100,000 population. However, in New Orleans, in the three years 1955 through 1957, there was an annual incidence of 2 per 100,000. Further comparison shows that tetanus in Louisiana is endemic with an annual incidence rate of about ten times that of the United States. In Charity Hospital last year there were seven times as many deaths from tetanus as from polio. In the previous year, there were three times as many deaths from tetanus as from polio.

In the face of these unpleasant but substantial facts, the Orleans Parish Medical Society has instituted an educational program for the medical profession. It is planned that this will lead to an inoculation campaign for the public. The Committee on Tetanus Protection of the Orleans Parish Medical Society, under the effective chairmanship of Dr. Richard A. Faust, is presenting a series of informative bulletins. Facts concerning the prevention of tetanus have been assembled and the prospect of being able to prevent

more than the statistically probable 189 deaths in the next ten years is inspiring.

Mass immunization has as much value in a properly organized program of civil defense as it has in the armed forces. All individuals who have had military experience in the recent war are already immunized. Their immunity can be kept active by inoculations every five years. Protection following immunization develops in a matter of months and is known to endure from five to possibly eleven years in some instances. Booster inoculations should be given every five years, and at the time of occurrence of a significant tetanus exposure. Following such a booster, there is a recall of high level protection against tetanus, which begins in four to six days.

Allergy to tetanus toxoid is rare. It may be manifested by soreness or swelling at the site of injection, and possibly, fever for twenty-four hours. Protection with toxoid is attended by less risk and greater security than that which can be gained by the use of antitetanic serum, also spoken of as tetanus antitoxin. The risk of dangerous allergy, and even anaphylaxis, with the serum is a significant one. Giving a test dose of 1:10 or 1:100 dilution is regarded by some as dangerous and there are those who advocate that the dilution of the initial test dose be 1:1000. In the absence of anaphylaxis, serum sickness is a prevalent condition which follows the injection of the antitoxin and may be accompanied by distressing illness of various types. The protection afforded by 1500 units of antitetanic serum lasts only a week. In doses three to ten times larger it lasts proportionately longer. The routine of proper surgical treatment of the wound involving a possible exposure to tetanus infection should be carefully carried out. Protection afforded by the toxoid does not alter established surgical principles.

The antibiotics are bactericidal for *Clostridium tetani*, but are not protective against the circulation of fixed toxin. Penicillin is known to kill both the tetanus germ and the spores, but does not kill the latter in the doses currently used. There are situations where it is desirable to use both the antitoxin for quick effect and the toxoid for ultimate protection whether as a booster or not. It is possible to give both at the same time using separate syringes and different extremities as the site of inoculation.

The continuous protection afforded by toxoid immunization is of great value in the treatment of trivial wounds. Insignificant injuries may not come under the view of a physician, and even if so, specific protection against tetanus may not be considered necessary. Yet 50 percent of the cases of tetanus occurring in the United States result from just such wounds in unimmunized people.

We have, therefore, within our reach the means to prevent most of the cases of tetanus that might occur. The use of this preventive treatment is attended by a minimum of discomfort and no perceptible risk. Either the milky or clear toxoid may be used by giving two or three injections, respectively, a month apart and an additional injection a year later. One inoculation should be repeated every five years and at the time of any significant tetanus exposure after the first year.

Medicine's efforts to maintain stable and dependable methods of practice have brought criticism that we are against everything. Our defense is that we are against folly. In the matter of tetanus prevention we have an opportunity to take the initiative in promoting a procedure which is safe, practical, and protective, and in accordance with medicine's highest ideals of guarding the public health.

ORGANIZATION SECTION

The Executive Committee dedicates this section to the members of the Louisiana State Medical Society, feeling that a proper discussion of salient issues will contribute to the understanding and fortification of our Society.

An informed profession should be a wise one.

REPORT OF THE PRESIDENT

In conformity with the constitutional requirements, your President submits the following report to the House of Delegates and membership of the Louisiana State Medical Society.

The functions of the Medical Society during the past year have been executed by the various officers and committees with thoughtfulness and diligence. The details of their actions will be found in the reports of the respective officers and committee chairmen.

During his term of office, your President has had an opportunity to visit most of the societies throughout the state and wishes to express his appreciation to the officers and members of those societies for the kindness and genuine hospitality which made these visits a real pleasure. In all instances he found a desire and willingness to cooperate with the State Society, and the doctors have been most helpful in making suggestions and recommendations for the betterment of Organized Medicine.

As is usual during a legislative year, the efforts to protect the integrity of the Medical Practice Act of the State of Louisiana were of prime importance. Due to the efforts of the Chairman of the Legislative Committee, the work of the Legislative Consultant and the unusually fine cooperation of the membership as a whole, we have again been able to defeat by a bare margin the undesirable legislation which was proposed. Your President feels that this margin was maintained only through a more effective organization and the persistent effort of individual members. However, if we are to continue to preserve the Medical Practice Act in the future, an even better organization and more continuous effort on the part of individuals will be necessary. A most effective public relations activity was conceived and initiated by the Legislative Committee and Legislative Consultant when an Emergency Station was set up in the State Capitol. This Station has been equipped by the State Medical Society and is to be staffed by the members of the East Baton Rouge Parish Medical Society. The Medical Society has been commended for the service rendered to the members of the Legislature. It is the recommendation of your President that the Legislative Committee be continued in its present form and that the services of Mr. Percy J. Landry as Legislative Consultant be retained.

In connection with the Medical Practice Act, it should also be mentioned that the State Board of Medical Examiners is presently involved in the federal courts. As a result of federal court procedures, it is anticipated that the chiropractic issue will be heard on its merits in federal court. It is the opinion of your President that it will be incumbent on the State Society to furnish informed witnesses who have both national and international recognition in their fields. It may also be desirable for the Society and the medical profession to become a party to such a suit, as the loss of this suit by the State Board of Medical Examiners would leave the medical profession without control as to qualifications and training and thereby endanger the health and well-being of the citizens of our State, who heretofore have been protected against unqualified practitioners. It is therefore recommended that the House of Delegates set up whatever means and mechanics as seem advisable for the successful termination of this legal action.

During the past year the medical profession gained wide lay approval by its support of the Medical Progress Exhibit at the State Fair in Shreveport. There was also favorable reaction nationally as the result of the combined efforts of the Louisiana State Medical Society and the Shreveport Medical Society in the operation of this very large exhibit. There have been requests from other fair organizations throughout the state for the establishment of such exhibits at the smaller fairs. In this work and in similar activities aimed at lay education which have gained favorable publicity, the Council on Medical Service and Public Relations and the firm of Perret and Kalman have been of invaluable assistance. It is recommended that this cooperation with the Shreveport Medical Society be continued and augmented, if possible. It is also recommended that the work of this Council and the Public Relations Counselors be continued and that an attempt be made to expand the coverage so that we might get considerably wider publicity into rural areas than we have had in the past.

Recently the problem of the aging has come to the fore and has assumed political, as well as social, importance on both the state and national levels. It is the opinion of your President that this will develop into one of the most difficult problems with which Organized Medicine will be faced in the next few years. The Geriatrics Committee has done a volume of excellent work on this subject. It is anticipated that the Society will have reasonable representation in the state organization relating to this problem and will be represented at the White

House Conference on the Aging in 1961. Because of the great amount of work expected of the Geriatrics Committee, it is recommended that this Committee continue under its present Chairman and be expanded to include members from all areas of the state.

The American Medical Education Foundation Committee has been extremely active during the past year and has begun to accomplish a great deal. For this effort I wish to compliment the Chairman of this Committee, and also express my appreciation to the Chairman and members of the Woman's Auxiliary for their excellent cooperation, which has contributed so markedly to the success of this program.

The Medicare program has undergone some very radical changes this past year, the details of which will be given by your representatives who handled the business of the Louisiana State Medical Society so well. The negotiations of this Committee accomplished remarkable results in obtaining for the Society what was probably the best contract held by any of the states. Unfortunately, within thirty days after the contract was signed, by federal directive and without consultation the whole program was completely changed. It is recommended that the whole subject be given very careful consideration by the House of Delegates in the light of past experience.

We have also been working for the past year under what is known as the Vendor Payment Plan put into effect by the Louisiana State Department of Public Welfare. Apparently there has been some misunderstanding among members of the profession as to what the intent and decision of the House of Delegates was in reference to this plan as expressed at the last Annual Meeting. It is the feeling of your President that the Department of Public Welfare has made every effort to satisfy all complaints of the medical profession and has been very kindly disposed toward every recommendation of the Advisory Committee of the State Society. This plan apparently has considerable value to members of the profession in several rural areas and therefore it is recommended that this situation be clarified in the House of Delegates at its next meeting. It seems to your President that the direction of the House of Delegates, as presently worded, is not objectionable and offers any physician the privilege of accepting or rejecting the arrangement at his discretion.

It has been the pleasure of your President to represent the State Society at numerous meetings of paramedical groups as well as non-related organizations and it is his feeling that the medical profession has much to gain by such contacts. At the recent convention of the Louisiana Hospital Association, he was invited to meet with the President, President-elect and Secretary of that organization and the President and Secretary of the Louisiana Nurses' Association. At this meeting it was proposed to set up a liaison committee, composed of two members from each of the three organizations, to meet twice a year, one meeting to be held prior to the convening of the State Legislature. Your President was selected to implement the formation of such a committee, subject to approval of the House of Delegates of the Louisiana State Medical Society. In the judgment of your President this proposal has merit. Possibly such a committee could solve many of the mutual problems presently existing, and might very well aid greatly in our legislative program. It is therefore, recommended that the House of Delegates approve the formation of such a committee. In another instance, your President was appointed to the Executive Committee of a Commission, set up at the last session of the State Legislature, to make a study of the problems of sex crime in Louisiana. We were fortunate in being able to have two other members of Organized Medicine appointed to this study group. This contact has a great potential in cementing good relations between the medical profession and members of the Legislature, as evidenced by a growing respect for and a seeking of medical opinion in matters of legislation.

The Louisiana Organizations for State Legislation Committees from the State Society and Woman's Auxiliary have both been very active and we have had fine representation from both of our groups at all meetings of this organization, known as LOSL. It is felt that this contact has been very valuable and should continue to prove helpful as a public relations measure. It gives the Medical Society an opportunity to guide thinking on much proposed legislation pertaining to matters of health and public welfare, and it was possible for the Society to support certain bills endorsed by other organizations which made for good will.

The Society has sustained the loss of one of its most eminent and faithful members in the death of Dr. James Q. Graves. "Dr. Jim," as he was affectionately known, served the Society as a delegate to the AMA for thirty years, and his death will be keenly felt, as will the loss of so many other personal friends and valuable members, who have died this year.

Your President wishes to express his admiration for the work of the Woman's Auxiliary and the splendid cooperation the Society has received this year from the various chairmen, and takes this opportunity of thanking the President and members who have extended him so many courtesies during his administration. This organization is constantly enhancing its value to Organized Medicine as a result of great effort both in their own projects and their active participation in lay organizations where they have been extreme-

ly successful in presenting the aims and ideals of Organized Medicine.

May I commend to you the efficient operation of your Society's office under the direction of your Secretary-Treasurer, Dr. C. Grenes Cole, and the efficiency and helpfulness of the Assistant Secretary-Treasurer, Miss Annie Mae Shoemaker, and their staff. Were it not for the good-humored patience, forebearance and assistance of this competent group during this past year, the office of President would not have been half so pleasant. With it, it has been, not only an honor, but a pleasure to serve Organized Medicine and the Louisiana State Medical Society. In the years to come, I shall cherish these memories and be grateful for the honor which the medical profession has seen fit to bestow on me. To your incoming President, Dr. Robyn Hardy, I offer my sincerest congratulations and good wishes. May you give him the same loyal cooperation so that the Society may continue to progress.

RECOMMENDATIONS

1. Committee on Public Policy and Legislation be continued in its present form and services of present Legislative Consultant be retained.

2. House of Delegates set up means and mechanics deemed advisable for successful termination of legal action with regard to the Medical Practice Act.

3. Continued cooperation with the Shreveport Medical Society with reference to the Medical Progress Exhibit.

4. Activity of the Council on Medical Service and Public Relations and of the present Public Relations Counselors be continued and expanded.

5. Committee on Geriatrics continue under its present Chairman and be expanded to include members from all areas of the state.

6. Consideration given Medicare program in light of past experience.

7. Clarification of Welfare Vendor Payment Plan.

8. Approval of formation of liaison committee, composed of two members from each of the following organizations: Louisiana State Medical Society, Louisiana Hospital Association and Louisiana Nurses' Association.

ARTHUR D. LONG, M.D., President

MEDICAL NEWS SECTION

CALENDAR

PARISH AND DISTRICT MEDICAL SOCIETY MEETINGS

Society	Date	Place
Ascension	Third Tuesday of every month	
Calcasieu	Fourth Tuesday every other month	Lake Charles
East Baton Rouge	Second Tuesday of every month	Baton Rouge
Lafayette	Second Tuesday of every month	Lafayette
Morehouse	Third Tuesday of every month	Bastrop
Natchitoches	Second Tuesday of every month	
Orleans	Second Monday of every month	New Orleans
Ouachita	First Thursday of every month	Monroe
Rapides	First Monday of every month	Alexandria
Sabine	First Wednesday of every month	
Tangipahoa	Second and fourth Thursdays of every month	Independence
Second District	Third Thursday of every month	
Shreveport	First Tuesday of every month	Shreveport
Vernon	First Thursday of every month	

EXECUTIVES SHOW LESS VASCULAR DISEASE THAN NONEXECUTIVES

Being an executive does not necessarily mean that you have high blood pressure or hardening of the arteries.

In fact, a recent five-year study of more than 2,000 individuals showed that executives had less hypertension and arteriosclerosis than did nonexecutive office workers of comparable sex, age, and work environment.

The study, reported in the June 19, 1958, Journal of the American Medical Association, was made by Dr. Richard E. Lee, New York Hospital - Cornell University Medical College, and Dr. Ralph E. Schneider, New York University College of Medicine.

The authors defined an executive as a person dealing with policy formation and implementation. The 1,171 male executives studied ranged from "top executives" (board directors, corporate officers, and general managers) to "minor executives" (division heads, auditors, and others of lesser rank than department heads).

Also studied were 1,203 nonexecutives, of

whom 563 were women. They included stenographers, secretaries, clerks, assistant supervisors, and supervisors.

Of executives, 12.3 per cent had some type of high blood pressure, as did 15 per cent of the male nonexecutives over 40 years of age. Arteriosclerosis of some type was found in 7.8 per cent of the executives and 15.4 per cent of the nonexecutives.

No significant relationship was found between the incidence of heart attacks and the level of business responsibility, the authors said. Heart attacks occurred in 3.7 per cent of executives and 5.1 per cent of the nonexecutive males over 40.

Among the reasons suggested by the doctors for the less than expected rate of executive vascular disease is that these men have learned the value of "escape valves" and the need for outside avenues of expression, such as hobbies.

"The lack of an increased incidence of hypertension among executives as a 'stress' phenomenon further emphasizes the importance of reaction by the individual to his environment rather than the physical and intellectual demands of that environment per se," the authors said.

"Stress is a relative and a subjective matter. When the inherent capacities of the individual to perform fail to measure up to the demands of his world, the harmonious balance between the subject and his environment is disrupted and a stress reaction takes place," they continued.

This occurs, they added, "regardless of whether the factor in the external environment is a speedily approaching deadline for a frantic technical assistant or the threatened failure of a large business venture for the director in charge."

In conclusion, the authors wondered if "at least a part of the recent emphasis on dangers of executive life to the vascular system may be based more on knowledge of the exceptions rather than of the rule."

AIR CONDITIONING IS HEALTHY

Air conditioning—custom tailored climate—means much more than mere cooling.

Properly used, air conditioning implies year-round modification of humidity, air currents, and dust content of air as well as combating cold or heat, said an article in the July 1958 issue of Today's Health, a publication of the American Medical Association.

According to the author, J. C. Furnas, Lebanon, N. J., air conditioning "rescues hay fever suffers from airborne pollen and keeps heart patients at recommended even, moderate temperatures."

It can, he said, "be distinctly 'good for' the healthiest . . . because it takes much of the curse off the bullying heat and smothering humidity of our temper-gnawing, energy-sapping summers."

In order to derive the full benefits from air conditioners, people must learn to keep windows and doors shut, the author said.

The air conditioner is designed on the assumption that it alone will be processing your indoor climate. "It needs no amateur help," he said.

Most people agree that air conditioning is helpful, but ideas of temperature comfort can also vary among individuals. "Humidity itself rules out any possibility of settling on an 'ideal temperature' for human beings," the author said.

A housewife who feels all right at 75 degrees with 50 per cent humidity will swelter if it goes to 80 per cent. Drop the humidity to 20 per cent and she will be chilled.

This is a sound reason for keeping the doors and windows shut. The author said "letting in untreated outside air destroys the humidity-temperature balance on which comfort depends."

Considerable debate still exists over the proper setting of the thermostat, the author said. In warmer parts of the country air-conditioned families often go for the fixed-level theory, ignoring outdoor conditions.

The author recommends, however, a 15 degree spread between the inside and outside temperature. "Thanks to the humidity angle," he said, "this 15 degree spread gets practically all the potential comfort out of home air conditioning."

With an efficient air conditioner keeping interior humidity at the proper 40-50 per cent level, even 80 degree temperature indoors to match 95 degrees outdoors will not be at all oppressive.

" 'It's not the heat; it's the humidity' may be trite," he said, "but it's the backbone of sound air conditioning."

NEW STUDY SUGGESTS POSSIBLE CAUSE OF SCHIZOPHRENIA

A new avenue of investigation into possible chemical causes of the mental illness schizophrenia has been suggested by a Harvard Medical School researcher.

Dr. Samuel Bogoch has found that adult schizophrenics have considerably less neuraminic acid—a component of the brain's gray matter—in the spinal cord fluid than do nonschizophrenics.

In fact, the levels of neuraminic acid in the cerebrospinal fluid of adult schizophrenics is "comparable only to values found in some children under seven years of age."

The low values in adult schizophrenic patients may indicate a form of chemical immaturity of the nervous system. This failure in chemical maturity would correlate well with clinical evidence of a failure of psychological maturity in the schizophrenic, he noted.

Writing in the August 1958 Archives of Neurology and Psychiatry, published by the American Medical Association, Dr. Bogoch said that more studies must be performed before any definite conclusions can be drawn regarding the use of neuraminic acid levels for diagnosing schizophrenia.

Dr. Bogoch said there have been many attempts to show some chemical cause of schizophrenia through the study of blood and urine, but there has been no definite demonstration of a chemical disorder in the central nervous system proper.

Thus his findings present "an important new area for further investigation," he said. One thing to be learned is the meaning of a lowered value of neuraminic acid in the cerebrospinal fluid.

He studied the neuraminic acid concentrations in the cerebrospinal fluid of 29 adult schizophrenic patients; 72 children under the age of seven years; 29 children between the ages of seven and 15, and 65 non-schizophrenic adults.

He found that low values in adults correlated well with the diagnosis of schizophrenia, whether it be an acute first attack or a chronic process of more than 10 years duration.

The exact function of neuraminic acid in the nervous system is not definitely known, Dr. Bogoch said. It appears to play some role in the functions of the "blood brain barrier," which helps maintain the special environment of the brain.

He theorized that low neuraminic acid concentrations might affect the functioning of the barrier, which in turn could account for the brain's misfunctioning and the resulting psychotic state.

Furthermore, it may not be necessary to seek specific chemicals as causal agents of schizophrenia, he said. The "causal agents" may be normal substances produced by the body's physical and chemical process. These substances are usually prevented by the blood-brain barrier from coming into prolonged contact with the brain. However, if the barrier doesn't work correctly, the substances may contact the brain, interfering with its environment and producing mental illness.

Then the possession of an inadequately developed barrier system would represent a "specific vulnerability to psychosis," he said.

Dr. Bogoch believes that this hypothesis can be proved or disproved. In addition, he said that tests are now underway to determine the effect of the administration of neuraminic acid itself and of neuraminic-acid-containing substances to psychotic patients.

Dr. Bogoch is associated with the neurochemical research laboratory of the Massachusetts Mental Health Center, and the department of psychiatry, Harvard Medical School, Boston.

TOY BALLOONS USED TO STOP GASTRIC BLEEDING

Toy balloons in the hands of skilled physicians are now saving the lives of persons suffering from massive stomach hemorrhages.

Writing in the April 4 issue of the Journal of the American Medical Association, four physicians from the University of Minnesota Medical School at Minneapolis reported that they have used the ordinary dime store rubber balloons successfully to stop duodenal ulcer bleeding in nine patients without recourse to surgery.

The technique, based on exhaustive preliminary research with animals, is comparatively simple. The empty balloon, wrapped about the end of a long tube, is passed into the patient's stomach and inflated. With the aid of an intricate machine, a cooling solution, consisting of equal parts of ethyl alcohol and ice-cold water, is circulated through the balloon. Constant temperature and circulating volume is controlled by the machine.

The cooling, which has been carried out in anesthetized animals for 48 hours and in man up to 125 hours, virtually stops gastric digestion and, in turn, also stops the hemorrhaging. As soon as the bleeding appears to be stopped, the machine is shut off, the balloon deflated and removed from the stomach, and the patient is carefully watched for a recurrence of symptoms.

The doctors—Owen H. Wangensteen, Harlan D. Root, Peter A. Salmon, and Ward O. Griffin, Jr.—said that from their observations the gastric cooling technique "holds promising therapeutic value in the management of massive hemorrhages from peptic-ulcer-linked conditions of the duodenum (the small intestine leading from the stomach), the stomach and the esophagus."

Altogether the cooling procedure has been used so far on 19 patients with different types of gastrointestinal bleeding. The majority of patients were in shock despite blood transfusions and their conditions were too poor for emergency surgery. Fifteen of the 19 patients required no further treatment.

COLD VACCINE PREDICTED WITHIN 24 MONTHS

A vaccine which will prevent from 60 to 70 per cent of all common colds will probably be available within the next 24 months, an expert in cold research has predicted.

"I realize that I have stuck my neck out," Dr. Thomas G. Ward, professor of virology at Notre Dame University, South Bend, Ind., said. However, he believes that a vaccine can be developed against "an acceptable proportion of the common colds."

In an interview, reported in the current (April) Today's Health, published by the American Medical Association, Dr. Ward said he does not believe that common colds will be wiped

out, even with an adequate vaccine.

"People are not going to take the vaccine, just as they are not taking polio vaccine . . .," he said. "People are people and we have great difficulty in selling preventive medicine. The prevention of disease is not as glamorous or as consuming to the individual as his actual illness."

From 75 to 80 per cent of common colds are caused by a group of viruses or a group of ordinary bacteria of the streptococcus type, Dr. Ward said. Others may be allergy-symptom colds or psychosomatic.

Viruses are protein substances that cannot be seen, even through a microscope. While related to the one-celled bacteria, viruses are not considered to be living bodies in themselves; they have the peculiar ability to live only in the presence of growing material. In addition to colds, they cause such diseases as measles, chickenpox, poliomyelitis, and rabies. Vaccines composed of dead or "tamed" viruses may be injected into the body and cause it to develop resistance against invasions by the viruses.

Dr. Ward defined a common cold as one wherein the individual has a runny nose two days in succession. This is the nasal type cold which causes the lining of the nose to become reddened and inflamed. No fever is associated with it and it is the kind that may be spread easily to other people.

There is no drug now on the market that could be termed effective against common cold viruses. Colds caused by bacteria may respond to antibiotics and allergy-caused colds may respond to antihistamines.

Until an effective cold vaccine is developed, about the only way to keep from catching cold, according to Dr. Ward, is to "follow the usual health measures such as keeping warm and dry, and well-fed. If possible stay away from those who have colds."

ANTIBIOTICS SHOULD NOT BE USED IN COSMETICS

The inclusion of antibiotics in cosmetics was opposed recently in a report of the American Medical Association.

There is no evidence that "constant degerming" of the skin, such as would be presumed to occur with the use of antibiotics in cosmetics, is "necessarily always or even frequently desirable," according to the report appearing in the April 4, A.M.A. Journal.

The report was written by two New York dermatologists, Drs. Carl T. Nelson and Marion B. Sulzberger, for the A.M.A. Committee on Cosmetics.

Antibiotics are now being used in deodorants to help kill bacteria and thus reduce odor. They have also been suggested for inclusion in face creams and in blemish lotions, according to Veronica L. Conley, Ph.D., committee secretary.

In a note, Dr. Conley said, "The persistent trend toward the incorporation of pharmacologically active ingredients into cosmetics has caused growing concern among the medical profession. . . . Medical experience provides considerable evidence of the health implications in the widespread, prolonged or indiscriminate use of antibiotics."

There is essential agreement, the report said, that antibiotics generally useful in the treatment of systemic infections should not be used in cosmetics. However, it has been proposed that certain other antibiotics (bacitracin, neomycin, polymyxin, and tyrothricin) be permitted in cosmetic preparations.

Even these, which are rarely used other than on the skin, carry certain dangers, according to the report. Some persons may be sensitive to the drugs and develop allergic reactions from continued contact. In addition, little information is available about the possibly harmful effects of the various antibiotics after absorption through the skin.

The possibility of bacteria becoming resistant to the effects of the antibiotics may be increased through prolonged use of the drugs. This would mean that when the drugs must be used to treat a disease caused by a resistant strain of bacteria, they would be ineffective.

In conclusion, the report said, "Except for the deodorant action of such agents in reducing axillary odors, their incorporation in cosmetics has not been proved to be of specific value, and their widespread use in cosmetics could well represent an increased risk to general public health as well as to certain hypersensitive individuals."

FASHIONABLE CLOTHING DESIGNED FOR PHYSICALLY HANDICAPPED

Physically handicapped persons can now buy clothing specially designed to combine fashion and function.

The clothing was designed at the Institute of Physical Medicine and Rehabilitation, New York University-Bellevue Medical Center, after consultation with Mrs. Helen Cookman, a fashion designer.

Physically handicapped persons have specific clothing problems, Dr. Howard A. Rusk and Eugene J. Taylor of the New York University-Bellevue Medical Center explained in the April 4, Journal of the American Medical Association.

They need clothing designed to permit greater ease in dressing with their limited muscle strength or range of motion. The fabric must also be strong enough to withstand the undue wear caused by friction from crutches or wheelchairs and by the strenuous activity required by handicapped persons in dressing. In addition, the clothes should be fashionable enough to permit greater social acceptance and increased self-

esteem by the disabled persons, Dr. Rusk said.

Of 17 items designed so far, six are now on the market. These include slacks for men and coat-dresses and suit-dresses for women. The clothes for women are especially designed to counteract the destructive effect of crutch-walking.

Fabrics are mostly wash-and-wear nylons and Dacrons, stitched with the strongest threads available, but care has been taken that the fibers do not generate too much electrostatic charge and will not cause wheel chair problems by sticking instead of sliding. Emphasis was also given to the use of closures which can be easily managed.

The clothing is being produced by a new, non-profit organization, Clothing Research, Inc. It is conducting a market test through direct mail selling. If the market test indicates a sufficient market for the clothing, additional garments will be produced and will be distributed through normal commercial channels, Dr. Rusk said.

Specific information about the clothing may be obtained from Clothing Research, Inc., 307 W. 38th St., New York 1.

SECOND ANNUAL MMM AWARDS FOR MEDICAL WRITING

The Editors of Modern Medical Monographs announce the 1959 competition for unpublished manuscripts on clinical subjects in the field of internal medicine. The purpose of these annual awards, which are known as the Modern Medical Monographs Awards, is to stimulate young physicians to communicate their work in the classical form of the monograph and to achieve high standards of medical writing.

The first prize will be five hundred dollars. In addition, the authors of those of the top-ranking manuscripts which are found suitable will be offered a contract for publication of their work as a book in the series Modern Medical Monographs under standard royalty arrangements. The generosity and cooperation of Dr. Henry M. Stratton, President, Grune and Stratton, Inc., publishers of the series, have made these awards possible.

The entries will be judged for style and clarity of expression by a committee of the American Medical Writers' Association and for clinical interest and scientific value by the Editors and Advisory Board of Modern Medical Monographs.

RULES:

1. The author must be a graduate physician, less than 40 years of age.

2. Manuscripts (including illustrations, if any) should be submitted in duplicate (original and one copy) by registered mail, postmarked no later than October 1, 1959, to Richard H. Orr, M.D., 33 East 68th Street, New York 21, New York.

3. The manuscript, including the bibliography, must consist of not less than 130, or more than 200, double-spaced typewritten pages with one-inch margins, and not more than 30 illustrations (pictorial charts, drawings, diagrams or photographs).

4. Fishbein's book, "Medical Writing" (third edition), should be followed in preparation of the manuscript, use of abbreviations, and bibliographical form.

Richard H. Orr, M.D.	Irving S. Wright, M.D.
Consulting Editor	Editor-in-Chief

LOUISIANA STATE BOARD OF MEDICAL EXAMINERS EXAMINATION:

Medicine and Surgery
June 4, 5, 6, 1959

Thursday, June 4, 1959	
8:30 A.M. to 10:30 A.M.	Pathology & Bacteriology
10:40 A.M. to 12:40 P.M.	Chemistry
1:40 P.M. to 3:40 P.M.	Obstetrics
3:50 P.M. to 5:50 P.M.	Hygiene
Friday, June 5, 1959	
8:30 A.M. to 10:30 A.M.	Theory & Practice of Medicine & Physical Diagnosis
10:40 A.M. to 12:40 P.M.	Surgery
1:40 P.M. to 3:40 P.M.	Physiology
3:50 P.M. to 5:50 P.M.	Gynecology
Saturday, June 6, 1959	
8:30A.M. to 10:30 A.M.	Anatomy
10:40 A.M. to 12:40 P.M.	Materia Medica

Applicants must be present at the examination room, 4th floor, Louisiana State University, School of Medicine, 1542 Tulane Ave., New Orleans, on Thursday, June 4, 1959 at 8:00 A.M.

Applications must be filed at 930 Hibernia Bank Bldg., N.O. by May 21st. For information, telephone MA 5313 or write Dr. Edwin H. Lawson, Secretary-Treasurer.

ACTOR SAYS THERE'S NOTHING WRONG WITH BEING OLD

Playing "grandpa" roles for 30 years has taught a famed Hollywood actor that there's really nothing wrong with being old.

In an article appearing in the October 1958 issue of Today's Health, a pulbication of the American Medical Association, actor Walter Brennan said old people spend too much time being sorry for themselves.

"If they'd spend the same amount of time thinking up things they'd like to do or developing an interest in some sort of consructive activity, they'd have much less time for self pity," he observed.

The 64-year-old Brennan is well acquainted with the subject of growing old. In addition to his movie roles, he is currently the star of the

TV program "The Real McCoys" in which he portrays Grampa McCoy. In real life the veteran actor has three children and 11 grandchildren.

From his own experience Brennan said there are certain things he is not going to do as a senior citizen. "First of all," he said, "I'm not going to preach. That seems to me one of the surest signs of senility.

"Then I'm not going to bear any resentment toward anyone, any time; nor am I ever going to compromise any of the principles that have always been important to me.

"And, finally, I'm never going to stop thanking God every morning and evening . . . for all the blessings He's sent my way."

To this personal philosophy, the actor believes Grampa McCoy would add these tips:

—Stop feeling sorry for yourselves; seek out constructive activity.

—Keep your minds and muscles satisfyingly occupied.

—Retain and sharpen your sense of humor.

—Quit compalining and start being thankful.

—Give abundantly of yourselves in any way that you are able.

Brennan also said that he is against compulsory retirement for anyone. "People keep saying to me," he said, " 'Sure, that's fine for creative people like you. But how about machine tool operators or desk clerks or department store buyers?' "

He answers, "Everyone is creative and every job is creative work—if you make it that way. If you don't, retirement isn't going to make any difference. The people who are bored and unhappy before retirement are going to continue the same afterward."

According to Brennan there are two things that can be done for oldsters. We can let them do for themselves as long as they are able and as much as they possibly can.

Secondly, we can make sure that the present younger generation is enlightened on what to do when they grow older.

AMERICAN BOARD OF OBSTETRICS AND GYNECOLOGY, INC.

The next scheduled examinations (Part II), oral and clinical for all candidates will be conducted at the Edgewater Beach Hotel, Chicago, Illinois, by the entire Board from May 8 through 19, 1959. Formal notice of the exact time of each candidate's examination will be sent him in advance of the examination dates.

Candidates who participated in the Part I Examination will be notified of their eligibility for the Part II Examinations as soon as possible.

The deadline date for the receipt of new and reopened applications for the 1960 examinations is August the first, 1959. Candidates may submit their applications at any time before that date and are urged to do so.

Robert L. Faulkner, M.D.
Secretary-Treasurer
2105 Adelbert Road
Cleveland 6, Ohio

WOMAN'S AUXILIARY

TO THE LOUISIANA STATE MEDICAL SOCIETY

THIRTY-SIXTH ANNUAL CONVENTION WOMAN'S AUXILIARY TO THE AMERICAN MEDICAL ASSOCIATION ATLANTIC CITY, NEW JERSEY

June 8-12, 1959

A cordial invitation is extended to all members of the Woman's Auxiliary to the American Medical Association, their guests, and the guests of physicians attending the convention of the American Medical Association, to participate in all social functions and attend the general meetings of the Auxiliary.

Headquarters will be at the Hotel Haddon Hall. Business sessions on Tuesday and Wednesday will be presided over by Auxiliary president Mrs. E. Arthur Underwood of Vancouver, Washington.

RAPIDES PARISH

The Woman's Auxiliary to the Rapides Parish Medical Society stressed Public Relations and Community Service in April and presented the movie film, "Albert Schweitzer," in five Alexandria and Pineville schools.

ORLEANS PARISH

The April monthly meeting and program-tea of the Woman's Auxiliary to the Orleans Parish Medical Society offered just too many wonderful treats for any one meeting. The day was the afternoon of the eighth and the place the Orleans Club and treat number one was the official visit of our pretty and charming state president Mrs. Edward M. Harrell of Lafayette, who entertained us with background information of A.M.A. and Louisiana State Medical Auxiliaries.

Mrs. Charles R. Robinson chairman of the essay contest and Mrs. V. Medd Henington co-chairman presented the top winners in the city-wide essay contest on "The Advantages of Private Medical Care" or "The Advantages of the

American Free Enterprise System" their awards. First place winner was Janet Scheibe of Fortier High school; second place went to John R. Tharp of De La Salle High School; third place, Harold Wainer of Fortier, and fourth place, Dorothy Dombourian of Fortier. Janet Scheibe in addition to receiving a check and a small silver loving cup also received for her school a larg silver loving cup to be displayed at Fortier High School. The trophy, presented this year for the first time by the medical auxiliary, is a floating one to be given permanently to the school winning it three times.

Mrs. Branch J. Aymond, Chairman
Press and Publicity.

BOOK REVIEWS

The Rudolph Matas History of Medicine in Louisiana, by John Duffy, (editor). Foreword by Isidore Cohn, M.D., Vol. 1, Louisiana State University Press, 1958. pp. 14-522, ills. 14. Price $10.00.

This is the first part of a two-volume work that will stand as one of the many permanent monuments to the long and distinguished career of Dr. Rudolph Matas, who died in 1957 at the age of 97.

In 1926, Dr. Matas had begun to collect material for a history of the Louisiana State Medical Society; with characteristic thoroughness, he probed varied original and secondary sources of information and accumulated a tremendous mass of records pertaining to all phases of medical history in the State. Dr. Matas, with failing health during the last several years of his life, realized that he would be unable to complete this broadened history and he accordingly arranged that it be carried on under supervision of a committee composed of several of his friends and former students. The committee had the good fortune to secure as editor, John Duffy, of the Department of History at Louisiana State University, and as consulting editor, Mary Louise Marshall of the Tulane School of Medicine, in charge of the Rudolph Matas Medical Library and Professor of Medical Bibliography.

Only one who has examined Dr. Matas' collected records, as I have, can fully appreciate the task that faced the editor in organizing and selecting the material for this book and in the actual writing of it. Already known as a contributor to the field of medical history in America, Prof. Duffy has supplemented that rich store of information and has analyzed the whole with professional expertness. A deep indebtedness is owed this able editor for completing the work begun by Dr. Matas and for doing it in a fashion that he would have warmly commended.

The volume covers the period 1699 through 1825, with occasional brief excursions beyond 1825 at points where the glimpse enlightens then existing situations. Its content is divided into three parts: Louisiana under France, 1699-1768; Louisiana under Spain, 1769-1803; the transitional period, 1804-1825. It is impossible in the scope of a review to do more than characterize the subject matter in general terms. The three parts are natural divisions not only from the standpoint of general history but natural also in that the status of medicine is correlated with the political phases as well as changing aspects of population and of living in the area. Chapter 1 deals with "the starving time," the early part of the French colonial period when human existence was challenged by many severely unfavorable circumstances—shortage of food, rampant disease, and inadequate medical care. From this start the story carries on with attention to the common diseases (notably yellow fever, malaria, smallpox, dysentery), medical men, practice and fees, the regulation of practice, the establishment and maintenance of hospitals, medical organizations, and other general topics. This book is not dead history; it is history that relives for the reader.

HAROLD CUMMINS, PH.D.

PUBLICATIONS RECEIVED

The C. V. Mosby Co., St. Louis: Therapeutic Radiology: Rationale, Technique, Results, by William T. Moss, M.D.; Surgical Pathology, by Lauren V. Ackerman, M.D., in collaboration with Harvey R. Butcher, Jr., M.D. (2nd edit.).

Office of the Surgeon General, Department of the Army, Washington: Surgery in World War II; Neurosurgery, Volume I, edited by R. Glen Spurling, M.D., and Barnes Woodhall, M.D.

Prentice-Hall, Inc., Englewood Cliffs, N. J.: Now or Never; The Promise of the Middle Years, by Smiley Blanton, M.D., with Arthur Gordon.

W. B. Saunders Co., Phila.: Diseases of Metabolism; Detailed Methods of Diagnosis and Treatment, edited by Garfield C. Duncan, M.D. (4th edit.); Fundamentals of Otolaryngology, by Lawrence R. Boies, M.D. (3rd edit).

The Williams & Wilkins Co., Balt.: Diseases of Women, by Ten Teachers, under the direction of Frederick W. Roques, M.D., F.R.C.S. (10th edit.).

Vantage Press, Inc., N. Y.: A Doctor Remembers, by Edward H. Richardson, M.D.